TECHNICAL REPORT

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Report for 2020 on the results from the monitoring of veterinary medicinal product residues and other substances in live animals and animal products

European Food Safety Authority,

Daniela Brocca and Stefania Salvatore

Abstract

The report summarises the monitoring data generated in 2020 in the frame of official control activities on the presence of residues of veterinary medicinal products and certain substances in live animals and animal products in the European Union, Iceland and Norway. A total of 620,758 samples for nearly 13 million single analytical results were reported to the European Commission by the 27 EU Member States, Iceland and Norway; of those samples, 331,789 were targeted samples and 4,259 suspect samples reported under Council Directive 96/23/EC, while 2,551 samples were collected at import and 282,159 samples tested in the framework of programmes developed under the national legislation. The majority of countries fulfilled the minimum requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC. Overall, the percentage of non-compliant samples in 2020 (0.19%) was lower compared to 2019 (0.30%), but also compared to the previous 11 years (0.25%-0.37%). The same overall pattern was observed for targeted samples in 2020 (0.27%) compared to the previous 3 years (0.30%-0.35%). Compared to the results from 2017, 2018 and 2019, in 2020 the frequency of non-compliant results was decreased for antithyroid agents, steroids and resorcylic acid lactones. For prohibited substances, compared to 2019 the frequency on non-compliance in 2020 was higher, although lower compared to 2017 and 2018. For chemical elements (including metals), compared to 2017 and 2019, the frequency on non-compliance in 2020 was lower, although higher compared to 2018. Decreases were noted for anthelmintics, organochlorine compounds, organophosphorus compounds, dyes and 'other substances', compared to 2017, 2018 and 2019 results. For anticoccidials, non-steroidal anti-inflammatory drugs (NSAIDs), 'other pharmacologically active substances' and mycotoxins, compared to 2019 the frequency on non-compliance was higher while lower for other substances and environmental contaminants. For the other substance groups, there were no notable variations.

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

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Correspondence: data.collection@efsa.europa.eu

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Amendment: An editorial correction was carried out in the first paragraph of section 3.4 that does not materially affect the contents or outcome of this scientific output. To avoid confusion, the original version of the output has been removed from the EFSA Journal, but is available on request.

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Summary

The present report summarises the monitoring data from 2020 on the presence of residues of veterinary medicinal products and certain substances in live animals and animal products in the European Union (EU), Iceland and Norway.

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 for a number of residues and monitoring programmes for the control of the presence of these substances in the food chain. Regulation (EU) No 37/2010 establishes maximum residue limits (MRL) for residues of veterinary medicinal products in food-producing animals and animal products. MRL 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 levels (ML) for the presence of certain contaminants in animal products. Council Directive 96/23/EC lays down measures to monitor certain substances and residues thereof, mainly veterinary medicinal products, in live animals and animal products. Additionally, Commission Decision 97/747/EC lays down levels and frequencies of sampling for certain animal products.

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

In 2020, 27 out of 27 European Union (EU) Member States, Iceland and Norway, reported in the framework of their residue monitoring programmes the results for 620,758 samples, lower (7.58%) compared to 2019; to be noted that United Kingdom did not transmit data to EFSA, due to the withdrawal of the United Kingdom (of Great Britain and Northern Ireland) from the (European) Union (and the European Atomic Energy Community). A total of 331,789 targeted samples and 4,259 suspect samples were reported under EU legislation (Council Directive 96/23/EC). Additionally, 282,159 samples collected in the framework of other programmes developed under the national legislation and 2,551 samples checked at import, were reported. The data analysis presented in this report is focused on the targeted samples reported under EU legislation. Samples collected through other sampling strategies (suspect, import or 'other') do not follow a designed monitoring plan; therefore, results on those samples are reported separately from the results on targeted samples.

The majority of countries fulfilled the requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC. However, it is important to note that some Member States have indicated that the minimum sampling frequency was not achieved due to the general measures imposed in the scope of the Covid19 pandemic situation.

Overall, in 2020 there were 888 or 0.27% of non-compliant samples out of the 331,789 targeted samples.

Among the group A residues (substances having anabolic effect and unauthorised substances), all samples were found compliant when tested for stilbenes and derivatives (A1). For antithyroid agents (A2), there were 0.34% non-compliant samples of terrestrial farmed animals, all for thiouracil, and possibly due to feeding diets rich in brassica and cruciferous plants; in 2019 all the A2 non-conform results were also reported for the same residue but the non-compliance rate observed was higher (0.58%). In the group of steroids (A3) the overall non-compliance rate observed was 0.15% (0.55% in 2019); non-compliant samples were found in bovines (0.11%), pigs (0.10%), horses (0.62%), and sheep and goats (4.23%). In the group of resorcylic acid lactones (A4), 0.04% of the tested samples were non-compliant for zearalanone and derivatives (0.11% in 2019); the non-compliant samples were found in bovines (0.01%), pigs (0.07%), and horses (1.55%). For beta-agonists (A5), there was one

non-compliant sample reported for salbutamol found in bovines. Prohibited substances (A6) were found in 0.02% of samples (0.01% in 2019). Substances identified were chloramphenicol (n = 11), metronidazole (n = 4), hydroxymetronidazol (MNZOH) (n = 3), semicarbazide (n = 3) and nitrofurazone (n = 1).

For group B1 (antibacterials), in 2020 0.14% of the samples analysed under the Directive 96/23/EC monitoring were non-compliant; the same non-conformity rate was reported in 2019. The highest frequency of non-compliant samples for antibacterials was found in rabbits (0.57%).

In group B2 (other veterinary drugs), in both 2020 and 2019 the highest proportion of non-compliant samples was found for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e) (0.23% in 2020, 0.19% in 2019)). For NSAIDs, the non-compliant samples were reported across the different species as follows; bovines (0.43%), poultry (0.04%), horses (1.17%), pigs (0.01%) and milk (0.41%).

Instances of non-compliance for anthelmintics (B2a) were reported in bovines (0.06%), sheep and goats (0.23%), pigs (0.02%), poultry (0.02%) and milk (0.09%); in 2020 the overall B2a non-compliance rate was 0.05% (0.11% in 2019).

For anticoccidials (B2b), 0.07% of the samples analysed were non-compliant (0.05% in 2019) and were reported across the different species as follows: pigs (0.01%), poultry (0.06%) and eggs (0.35%). From 2009 to 2019, an overall important decrease has been observed in the frequency of non-compliant samples for anticoccidials (B2b) in poultry; in 2020 the non-compliance rate was higher than in 2019 (0.03%).

No non-compliant samples were reported for pyrethroids (B2c) or sedatives (B2d); the same finding was observed in 2019. Non-compliant samples (0.07% of the tested samples) were reported for 'other pharmacologically active substances' (B2f), in bovines (0.14%), poultry (0.07%) and honey (0.14%). A similar result was reported in 2019 (0.06% samples).

In the Group B3 (other substances and environmental contaminants), also in 2020 the 'chemical elements' (B3c) had the highest overall percentage of non-compliant samples (3.71% in 2020, 4.21% in 2019), with copper, cadmium, total mercury and lead being most frequently identified. Non-compliant samples were reported for organochlorine compounds (subgroup B3a) and organophosphorus compounds (subgroup B3b); 0.1% and 0.01%, respectively. For mycotoxins (subgroup B3d), non-compliant samples were reported for pigs (0.21%), horses (2.27%) and milk (0.26%), with those identified being zearalenone, aflatoxin M1 and ochratoxin A. For dyes (B3e), non-compliant samples were reported for aquaculture (0.62%). The substances found were 'Sum of crystal violet and leucocrystal violet' and 'Sum of malachite green and leuco-malachite green'. For 'other substances' (subgroup B3f), non-compliant samples were reported for acetamiprid in honey (0.15%) and fipronil in pigs (0.11%).

Overall, the percentage of non-compliant samples in 2020 (0.19%) was lower than in 2019 (0.30%) and compared to the previous 11 years (0.25%-0.37%).

The same overall pattern was observed for targeted samples in 2020 (0.27%) compared to the previous 3 years (0.30%-0.35%). Compared to the results from 2017, 2018 and 2019, in 2020 the frequency of non-compliant results was decreased for antithyroid agents (A2), steroids (A3) and resorcylic acid lactones (A4). For prohibited substances (A6), compared to 2019 the frequency on non-compliance in 2020 was higher, although lower compared to 2017 and 2018. For chemical elements (including metals) (B3c), compared to 2017 and 2019, the frequency on non-compliance in 2020 was lower, although higher compared to 2018. Decreases were noted for anthelmintics (B2a), organochlorine compounds (B3a), organophosphorus compounds (B3b), dyes (B3e) and 'other substances' (B3f), compared to 2017, 2018 and 2019 results. For anticoccidials (B2b), non-steroidal anti-inflammatory drugs (NSAIDs) (B2e), 'other pharmacologically active substances' (B2f) and mycotoxins (B3d), compared to 2019 the

frequency on non-compliance was higher while lower for other substances and environmental contaminants (B3). For the other substance subgroups (A1 'stilbenes and derivatives', A5 'beta-agonists', B1 'antibacterial substances' and B2b 'anticoccidials'), there were no notable variations.

Table of Contents

Summary 3
1. Introduction 7
1.1. Background and Terms of Reference as provided by the European Commission 7
1.1.1. Background 7
1.1.2. Terms of reference as provided by the European Commission 7
1.2. Additional information 8
1.3. Objectives 10
2. Data and Methodologies 10
3. Results 12
3.1. Overall assessment 12
3.1.1. Hormones 15
3.1.2. Beta-agonists 16
3.1.3. Prohibited substances 16
3.1.4. Antibacterials 17
3.1.5. Other veterinary drugs 18
3.1.6. Other substances and environmental contaminants 21
3.1.7. Multi-year comparison 23
3.2. Bovines 25
3.3. Pigs 28
3.4. Sheep and goats 31
3.5. Horses 34
3.6. Poultry 37
3.7. Aquaculture 40
3.8. Milk 43
3.9. Eggs 46
3.10. Rabbit meat 49
3.11. Farmed game 52
3.12. Wild game 55
3.13. Honey 57
3.14. Suspect, import and other samples 60
4. Conclusions 62
5. References 65
6. Abbreviations 66
Appendix A – List of non-compliant results: Targeted sampling 67
Appendix B – List of non-compliant results: Suspect sampling 84
Appendix C – List of non-compliant results: Import sampling 88
Appendix D – List of non-compliant results: 'Other' sampling 89
Appendix E – Annex I to Directive 96/23/EC 91

1. Introduction

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

1.1.1. Background

Council Directive 96/23/EC[1] requires the Member States to implement a national residue monitoring plan for specific groups of residues specified in its Annexes I and II, in accordance with the sampling strategy and sampling frequency laid down in Annexes III and IV. Member States must submit their monitoring data and resulting control measures no later than 31 March of the following year. Since 2018, this data has been collected by EFSA. Member States must also publish the outcome of the implementation of their plans.

The Commission has the obligation to make available to the public an annual report on the outcome of official controls in the Member States.

1.1.2. Terms of reference as provided by the European Commission

In the framework of Article 31 of Regulation (EC) No 178/2002, the Commission requests EFSA's assistance in the collection of the data obtained by the Member States in accordance with Directive 96/23/EC.

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

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

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

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

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

EFSA shall present each annual compilation in the Standing Committee of the Food Chain and Animal Health and collect comments from the Commission and the Member States. EFSA shall send the final annual compilation taking into account the comments received to the Commission services.

1.2. Additional information

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

Council Directive 96/23/EC on measures to monitor certain substances and residues thereof in live animals and animal products requires Member States to adopt and implement a national residue monitoring plan for the groups and subgroups of residues detailed in its Annex I in accordance with the sampling rules referred to in Annex IV; this substance residues classification is reported in Appendix E of the present report. 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[2] lays down rules for levels and frequencies of sampling for milk, eggs, honey, rabbit meat and game.

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

The requirements for the analytical methods to be applied in the testing of official samples and the common criteria for the interpretation of analytical results are laid down in Commission Decision 2002/657/EC[3] 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 EU legislation. This means that, the national plans of each reporting country, 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.

Import samples are those that are taken by the national competent authorities at the EU territory borders[4] in the frame of border inspection activities.

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.

[2] 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.
[3] 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.
[4] In 2020, out of the overall number of reported samples, five of them were reported with origin United Kingdom. Out of those five samples, two were coded as import samples and three as targeted samples.

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

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

Non-compliant result since the entry into force of Decision 2002/657/EC, the term for analytical results exceeding the permitted limits 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) is the maximum concentration of residue resulting from the use of a veterinary medicinal product which may be accepted by the Community to be legally permitted or recognised as acceptable in or on a food. For veterinary medicinal products, MRLs are established according to the procedures laid down in Regulation (EC) No 470/2009[5] of the European Parliament and of the Council of 6 May 2009. Pharmacologically active substances and their classification regarding maximum residue limits in foodstuffs of animal origin are set out in Commission Regulation (EU) No 37/2010[6]. In addition, Commission Directive No 2009/8/EC[7] lays down maximum levels of unavoidable carry-over of coccidiostats or histomonostats in non-target feed and Commission Regulation (EC) No 124/2009[8] lays down maximum levels for the presence of coccidiostats or histomonostats in food resulting from the unavoidable carry-over of these substances in non-target feed.

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

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

Minimum Required Performance Limits (MRPLs) - according to the Annex to Commission Decision 2002/657/EC, MRPL is the minimum content of an analyte in a sample which has to be detected and

[5] Regulation (EC) No 470/2009 of the European Parliament and of the Council of 6 May 2009 laying down Community procedures for the establishment of residue limits of pharmacologically active substances in foodstuffs of animal origin, repealing Council Regulation (EEC) No 2377/90 and amending Directive 2001/82/EC of the European Parliament and of the Council and Regulation (EC) No 726/2004 of the European Parliament and of the Council. OJ L 152, 16.6.2009, p. 11–22.
[6] Commission Regulation (EC) No 37/2010 of 22 December 2009 on pharmacologically active substances and their classification regarding maximum residue limits in foodstuffs of animal origin. OJ L 15, 20.1.2010, p. 1–72.
[7] Commission Directive 2009/8/EC of 10 February 2009 amending Annex I to Directive 202/32/EC of the European Parliament and of the Council as regards maximum levels of unavoidable carry-over of coccidiostats or histomonostats in non-target feed. OJ L 40, 11.2.2009, p. 19–25.
[8] Commission Regulation (EC) No 124/2009 of 10 February 2009 setting maximum levels for the presence of coccidiostats or histomonostats in food resulting from the unavoidable carry-over of these substances in non-target feed. OJ L 40, 11.2.2009, p. 7–11.
[9] Regulation (EC) 396/2005 of the European Parliament and of the Council of 23 February 2005 on maximum residue levels of pesticides in or on food and feed of plant and animal origin and amending Council Directive 91/414/EEC. OJ L 70, 16.3.2005, p. 1–16.
[10] Commission Regulation (EC) 1881/2006 setting maximum levels for certain contaminants in foodstuffs. OJ L 364, 20.12.2006, p. 5–24.

confirmed. It is intended to harmonise the analytical performance of methods for substances for which no permitted limit has been established. MRPLs for chloramphenicol, nitrofurans metabolites and medroxyprogesterone acetate were established by Commission Decision 2003/181/EC[11] and for malachite and leuco-malachite green were established by Commission Decision 2004/25/EC[12].

1.3. Objectives

The present report summarises the monitoring data generated in 2020 and submitted by the EU Member States, Iceland and Norway to the EFSA. Data analysis was mainly focused on data submitted under Directive 96/23/EC and aimed to provide an overview on:

- production volume and number of samples collected in each EU Member State[13], Iceland and Norway. These data were used to check whether the countries 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;
- overall distribution of non-compliant samples in the substance groups.

2. Data and Methodologies

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

The samples taken in 2020 were reported using Standard Sample Description Version 2.0 format (EFSA, 2013). This standard can be used to report the results of laboratory tests performed on samples of food, feed, animals, non-food related animal matrices and plants. Specific requirements for reporting the results of laboratory tests for veterinary medicinal products are described in EFSA, 2021a and EFSA, 2021b. The standard allows results for all marker residues analysed for in a sample of animals or animal products to be reported. The following information is recorded:

Sampling event: one or more tissues taken from an animal at a specific location and at a specific point in time (e.g. kidney and muscle samples taken from a single pig carcass at slaughter). The sampling event requires, the sampling point and sampling strategy to be recorded. The sampling strategy can be targeted, suspect, import or other. In the context of this report, when any reference is made to 'samples', 'number of samples', and/or 'number of non-compliant samples' these references should be understood as referring to the concept of 'sample event' and not to the 'samples taken' (see below).

[11] Commission Decision 2003/181/EC of 13 March 2003 amending Decision 2002/657/EC as regards the setting of minimum required performance limits (MRPLs) for certain residues in food of animal origin. OJ L 71, 15.3.2003, p. 17–18.
[12] Commission Decision 2004/25/EC of 22 December 2003 amending Decision 2002/657/EC as regards the setting of minimum required performance limits (MRPLs) for certain residues in food of animal origin. OJ L 6, 10.1.2004, p. 38—39.
[13] In 2020 United Kingdom did not transmit data to EFSA, due to the withdrawal of the United Kingdom (of Great Britain and Northern Ireland) from the (European) Union (and the European Atomic Energy Community).

Sample taken: The sample taken is described using EFSA FoodEx2 classification (e.g. beef liver or chicken eggs) (EFSA, 2015). These samples are then categorised as bovines, pigs, sheep & goats, horses, poultry, rabbit, farmed game, wild game, aquaculture, milk, eggs and honey. Samples of game birds such as quail, partridge and pheasant are classified in the poultry category, unless they are reported as 'wild or gathered or hunted'; in the latter case, the samples have been classified in the wild game category. Due to this approach, which differs from the classification methodology followed by some countries, discrepancies might be noted between the National Plans submitted to the EC and the results included in this report. The control results on composite and/or processed food based on animal origin products (e.g. ice cream and cheese based on cow's milk) reported to EFSA have not been account for the preparation of the present report.

The country where the sample was taken, the date of sampling and the country of origin are also recorded.

Analytical method: Both screening and confirmatory tests can be reported. CCbeta – i.e. the detection capability - is reported for screening tests and CCalpha the decision limit is reported for confirmatory tests.

Marker residue: The results for all residues, both above and below the limits of detection and covered by the scope of a laboratory method, are reported. An analysis hierarchy groups the residues according to the substance groups described in Annex I of Directive 96/23/EC. In case of marker residue definitions referring to the sum of more components ('Multicomponent/Sum' residue definition') is set in EU MRL legislation for a given food matrix of animal origin, in the present report the summary results have been reported referring only to this 'sum' residue definition and not (also) to the single components of the 'sum'.

Non-compliant results: Each result is classified as compliant or non-compliant by the reporting country. Additional information on investigation outcomes in the case of non-compliant results is also recorded, where available. In cases where the control results have been reported for the 'Multicomponent/Sum' residue definition (e.g. for the marker residue 'Sum of enrofloxacin and ciprofloxacin') in addition to the single components' results (e.g. in cases where the results were also reported for enrofloxacin and/or for ciprofloxacin), the non-compliant results at sample event level have been totalled considering only the sum-results to avoid double-counting.

The data was submitted in XML format to the EFSA Data Collection Framework (DCF). Automatic data quality checks were performed as described in EFSA, 2021a. Each reporting country was provided with the opportunity to validate their data submission by examining and confirming the content of a ad- hoc National report, which summarises the data that had been submitted.

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

The reported data is aggregated counting the number of distinct sampling events (**samples analysed**), the number of sampling events where one or more results are non-compliant (**non-compliant samples**) and the number of non-compliant results (**non-compliant results**) by reporting country, animal category/product, marker residue and substance group. Since more than one result can be non-compliant in a sample the sum of non-compliant results might be higher than the sum of non-compliant samples. The percent non-compliant samples were calculated with non-compliant samples as the nominator and samples analysed as the denominator. Previously, in the data analysis performed up to the control activities carried out in 2016, the number of samples analysed for a specific residue was not always available from countries where there were no non-compliant results. Using the current approach,

the percent non-compliant samples may in some cases be higher, as in the previous approach samples which had not been tested for a specific residue may have been included in the denominator. The percentage of non-compliance is estimated for each substance group and within each substance group. Also, binomial 95% confidence intervals with Wilson approximation are produced in order to account for the uncertainty around the point estimates, considering the amount of samples that were tested for each of the substances and animal/product combinations, reflecting potential ranges in which the non-compliance level could be (see Figures 1 to 4). The resulting confidence intervals could be used to highlight the potential upper bounds for non-compliance observed. Moreover, this year an interactive data visualization based on the same source of VMPR data is made available.

The data used in the preparation of this report were extracted from the EFSA database on 11 October 2021 and are reflective of the database during this time period.

The data analysis was performed using Python ™ software.

3. Results

3.1. Overall assessment

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

In 2020, 620,758 samples were reported by 27 out of 27 EU Member States, Iceland and Norway, for analysis of substances and residues covered by Directive 96/23/EC; the number of single analytical results reported amounted to nearly 13 million. Out of this number of samples, 331,789 were targeted samples collected in conformity with the specifications of the National Residue Control Plans (NRCPs) for 2020. Additionally, 4,259 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 282,159 samples collected in the framework of other programmes developed under their national legislation. A relatively limited number of data were reported for samples checked at import (n = 2,551). 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)).

Compared to the previously monitoring year (2019) both the total and targeted number of samples tested was lower in 2020; this decrease can be partially ascribed to the fact that one country data (United Kingdom) were not reported to EFSA and due to the constrains certain Member States had to face due to the Covid19 pandemic situation in Europe. To be noted that United Kingdom reported in 2019 more than 30,000 samples which account for at least 5% of the total samples reported last year.

Of the total targeted samples, 55.45% were analysed for substances having an anabolic effect and unauthorised substances (group A) and 66.58% for veterinary drugs and contaminants (group B)[14]. Of the 331,789 targeted samples, 888 were non-compliant (0.27%) (1,076 non-compliant results); thus, some samples were reported as non-compliant for more than one residue. The percentage of non-compliant samples calculated from the total number of samples analysed for substances in that category was: 0.06% (148 non-compliant results) for substances having an anabolic effect and unauthorised substances (A), 0.14% (171 non-compliant results) for antibacterials (B1), 0.1% (120 non-compliant results) for the 'other veterinary drugs' (B2) and 1.18% (637 non-compliant results) for 'other

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

substances and environmental contaminants' (B3). A wider confidence interval - that indicates higher uncertainty on the estimated proportion - was observed for group B3 residue results, in particular for chemical elements (including metals) (B3c) and dyes (B3e). (Table 1, Figure 1).

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples [d]	Non-compliant results[e]
A	183,969	55.45	115	0.06	148
A1	21,867	6.59	0	-	0
A2	10,215	3.08	35	0.34	35
A3	38,642	11.65	57	0.15	68
A4	19,250	5.80	7	0.04	22
A5	34,624	10.44	1	0.00	1
A6	96,123	28.97	15	0.02	22
B	220,904	66.58	778	0.35	928
B1	93,920	28.31	127	0.14	171
B2	109,953	33.14	109	0.10	120
B2a	31,653	9.54	16	0.05	17
B2b	34,619	10.43	25	0.07	27
B2c	10,505	3.17	0	-	0
B2d	8,435	2.54	0	-	0
B2e	21,884	6.60	50	0.23	57
B2f	28,533	8.60	19	0.07	19
B3	45,899	13.83	542	1.18	637
B3a	18,157	5.47	18	0.10	43
B3b	11,468	3.46	1	0.01	1
B3c	13,434	4.05	499	3.71	569
B3d	7,610	2.29	11	0.14	11
B3e	1,792	0.54	11	0.61	11
B3f	5,678	1.71	2	0.04	2
Total	331,789	100.00	888	0.27	1,076

(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): a percentage of 0.00 indicates at least one non-compliant sample (i.e. the actual percentage is lower than 0.00), while '-' indicates that all samples were compliant;

(e): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group.

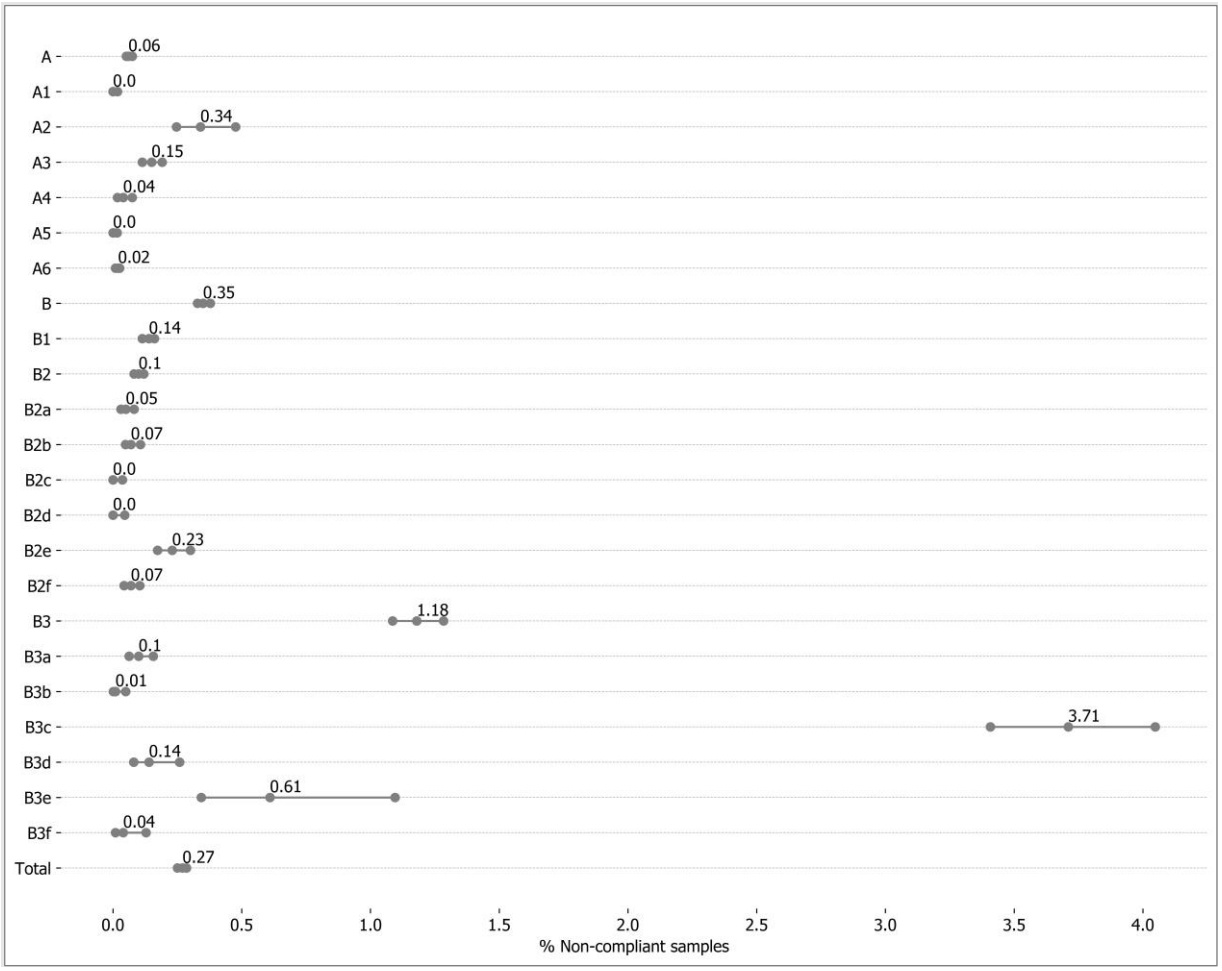


Figure 1: Percentage of non-compliant samples (with confidence intervals) in each substance group

3.1.1. Hormones

Directive 96/22/EC[15] prohibits the use of hormones in food producing animals except for well-defined therapeutic and zootechnical purposes and under strict veterinary control.

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

Of all the targeted samples analysed for the category 'hormones' (group A1-A4) in all animal/product categories (89,974 samples) there were 99 non-compliant samples (0.11%) (125 non-compliant results).

The number of targeted samples analysed for stilbenes and derivatives (A1) in all animal/product categories together, was 21,867 and no non-compliant samples were reported for this group.

Antithyroid agents (A2) were analysed in 10,215 targeted samples of which 35 samples were non-compliant (0.34%) (35 non-compliant results). All non-compliant samples in the group A2 were for thiouracil and were found in bovines (n = 29; 0.55%), pigs (n = 2; 0.06%) and sheep/goats (n = 4;

[15] Council Directive 96/22/EC of 29 April 1996 concerning the prohibition on the use in stock farming of certain substances having a hormonal or thyrostatic action and of ß-agonists, and repealing Directives 81/602/EEC, 88/146/EEC and 88/299/EEC. OJ L 125, 23.5.1996, p. 3–9.

1.99%). Residues of thiouracil resulted most probably from feeding diets rich in brassica and 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. In 2019 all the A2 non-conform results were also reported for the same residue, but the non-compliance rate observed was higher than in 2020 (0.58%); thiouracil is a historical anti-thyroid product, whose use may have been replaced by more recent medicinal products.

For steroids (A3), of the 38,642 samples analysed in all animal species and product categories, 57 samples were non-compliant (0.15%) (68 non-compliant results). The non-compliant samples were found in bovines (n = 25; 0.11%), pigs (n = 10; 0.10%), horses (n = 11, 0.18%) and sheep and goats (n = 21; 4.23%). Some Member States have indicated that – after investigations - 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).

For resorcylic acid lactones (A4), of 19,250 samples analysed in all animal species and product categories, 7 were found non-compliant (0.04%) (22 non-compliant results), for zearalanone and derivatives. The non-compliant samples were found for bovines (n = 1; 0.01%), pigs (n = 4; 0.07%) and horses (n = 2; 1.55%).

3.1.2. Beta-agonists

Beta-agonists (A5) are used therapeutically in human and animal medicine for specific effects on smooth muscle. When misused at higher doses, they can also act as growth promoters by stimulating the increase of the muscular mass and reducing the adipose tissue. Directive 96/22/EC prohibits the use of beta-agonists in food producing animals, except for well-defined therapeutic purposes and under strict veterinary control. In 2020, 34,624 targeted samples were analysed for beta-agonists, with one non-compliant sample reported for salbutamol in bovines.

3.1.3. Prohibited substances

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

In the framework of the 2020 residue monitoring, 96,123 targeted samples were analysed for prohibited substances and 15 samples (0.02%) were non-compliant (22 non-compliant results). Altogether, there were 11 non-compliant results for chloramphenicol, 4 for metronidazole, 3 for hydroxymetronidazol (MNZOH), 3 for semicarbazide and 1 for nitrofurazone (Table 2).

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

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

Residue Definition	Species/Product	Country reporting non-compliant results at residue definition level	Number of non-compliant results
Chloramphenicol	Milk	Lithuania	6
Chloramphenicol	Milk	Poland	1
Chloramphenicol	Pigs	Germany	3
Chloramphenicol	Pigs	Spain	1
Hydroxymetronidazol (MNZOH)	Eggs	France	2
Hydroxymetronidazol (MNZOH)	Pigs	Spain	1
Metronidazole	Eggs	France	2
Metronidazole	Pigs	Spain	1
Metronidazole	Poultry	Czechia	1
Nitrofurazone	Poultry	Germany	1
SEM (semicarbazide)	Pigs	Czechia	1
SEM (semicarbazide)	Sheep/goats	Austria	2

3.1.4. Antibacterials

The group of antibacterials (B1) includes antibiotics (e.g. beta-lactams, tetracyclines, macrolides, aminoglycosides), but also sulphonamides and quinolones. The total number of analyses carried out in 2020 for antimicrobials in targeted samples was 93,920 of which 127 (0.14%) were non-compliant (171 non-compliant results) (Table 1). The animal group most frequently tested for antibacterial residues was pigs (36,262 targeted samples); the highest frequency of non-compliant samples for antibacterials was observed in rabbits, while the highest uncertainty of the estimated frequency of non-compliant samples (widest confidence interval) was observed in wild game (0.57%) (Figure 2).

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

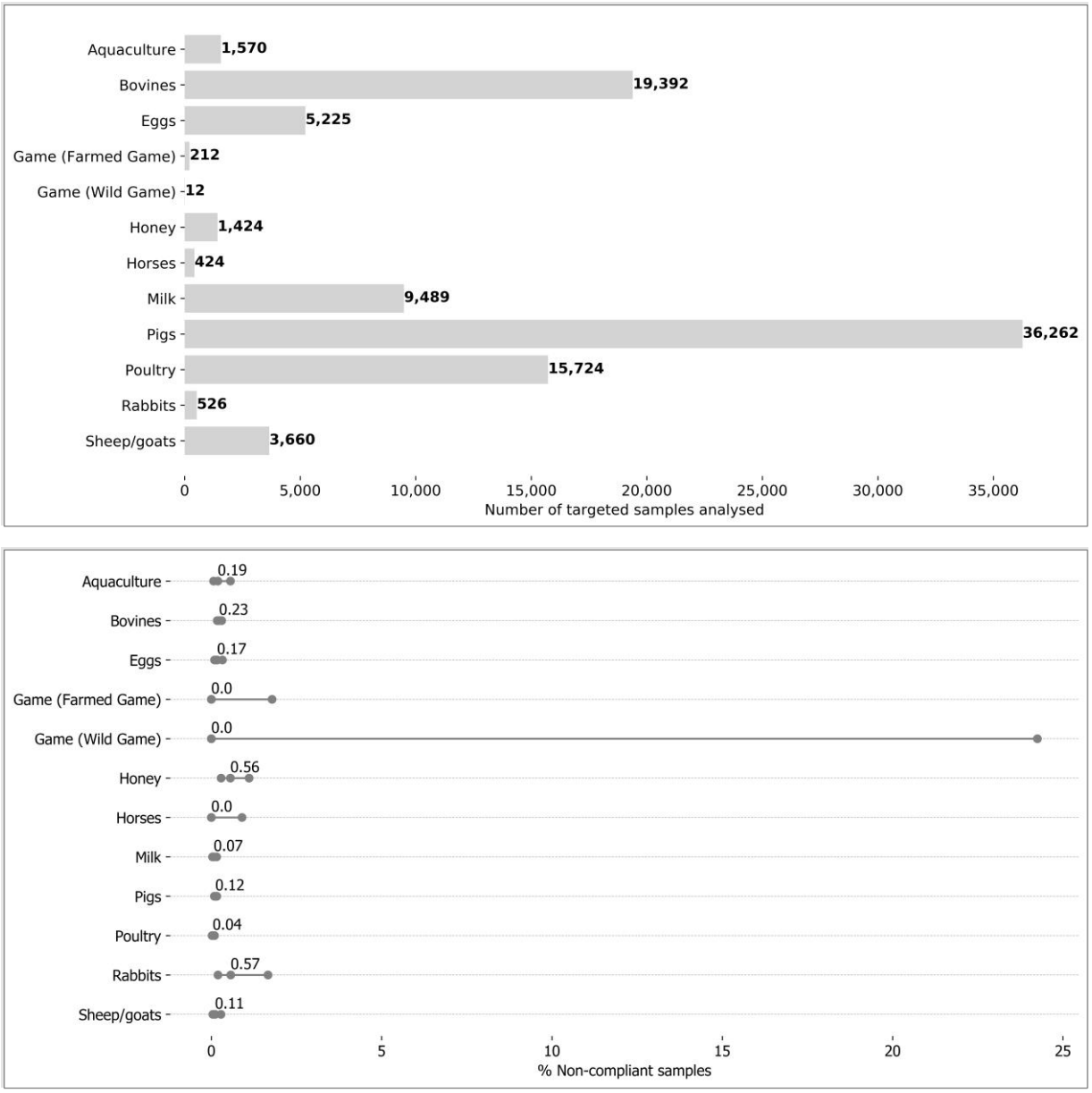


Figure 2: Number of targeted samples analysed and percentage of non-compliant samples (with confidence intervals) for antibacterials (B1) in animal/product categories

3.1.5. Other veterinary drugs

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

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

In the 2020 monitoring, 109,953 targeted samples were analysed for substances in the group B2 and 109 samples (0.1%) were non-compliant (120 non-compliant results). The total number of targeted samples analysed for each subgroup in the group B2 and the percentage of non-compliant samples is presented in Figure 3. It is important to note that the frequency of analyses for substances in the B2 subgroups follows a different pattern in each species, depending on their animal specific therapeutic application. An overview of the number of samples analysed and the percentage of non-compliant samples for the B2 subgroups in the specific animal/product category is presented in Table 3.

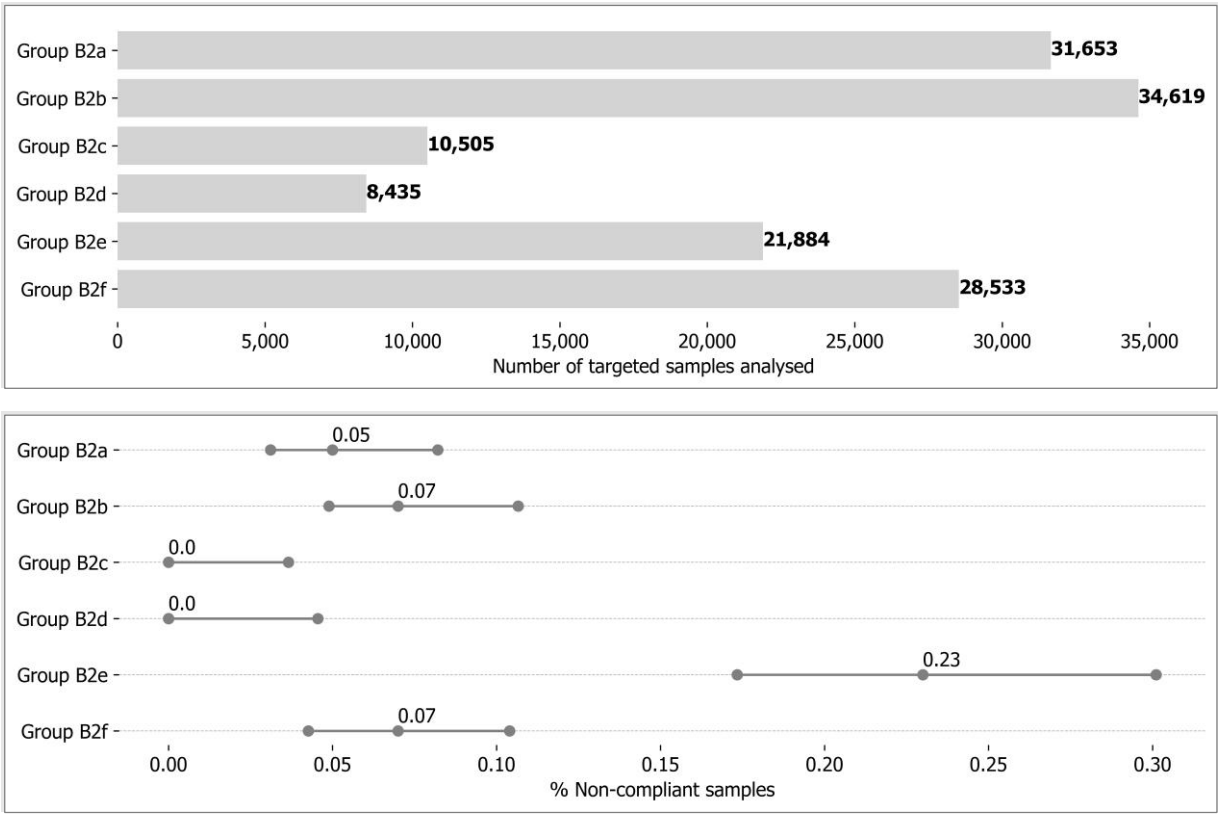


Figure 3: Number of targeted samples analysed within the group 'other veterinary drugs' (B2) and the percentage of non-compliant samples (with confidence intervals)

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

Group	B2a %NC	B2a Samples	B2b %NC	B2b Samples	B2c %NC	B2c Samples	B2d%NC	B2d Samples	B2e %NC	B2e Samples	B2f %NC	B2f Samples
Aquaculture	-	799	-	233	-	384	-	41	-	7	-	421
Bovines	0.06	6,749	-	3,516	-	1,753	-	1,616	0.43	5,078	0.14	11,815
Eggs	-	1,212	0.35	4,914	-	1,095	-	48	-	15	-	1,138
Game (Farmed Game)	-	206	-	121	-	71	-	30	-	48	-	54
Game (Wild Game)	-	90	-	15	-	43	-	0	-	6	-	1
Honey	-	264	-	120	-	818	-	0	-	0	0.14	709
Horses	-	230	-	104	-	145	-	164	1.17	427	-	247
Milk	0.09	5,783	-	2,626	-	383	-	104	0.41	5,165	-	1,025
Pigs	0.02	10,391	0.01	10,292	-	2,652	-	6,035	0.01	8,280	-	9,596
Poultry	0.02	4,073	0.06	11,824	-	2,536	-	91	0.04	2,314	0.07	2,770
Rabbits	-	134	-	240	-	83	-	3	-	69	-	90
Sheep/goats	0.23	1,722	-	614	-	542	-	303	-	475	-	667

%NC: percentage of non-compliant samples;

'-': indicates that all samples were compliant.

Regarding the number of samples analysed in each B2 subgroup, the highest proportion of non-compliant samples (0.23%), with the highest uncertainty, was observed for non-steroidal anti-inflammatory drugs (B2e), non-compliant samples were reported in bovines (0.43%), poultry (0.04%), horses (1.17%), pigs (0.01%) and milk (0.41%).

For anthelmintics (B2a), non-compliant samples were reported in bovines (0.06%), sheep and goats (0.23%), pigs (0.02%), poultry (0.02%) and milk (0.09%).

Non-compliant samples for anticoccidials (B2b) were reported in pigs (0.01%), poultry (0.06%) and eggs (0.35%).

No non-compliant samples were reported for pyrethroids (B2c) and sedatives (B2d).

For 'other pharmacologically active substances' (B2f), non-compliant samples were observed for bovines (0.14%), poultry (0.07%) and honey (0.14%): 19 non-compliant results were reported by seven countries and the substances identified were Amitraz (amitraz including the metabolites containing the 2,4 -dimethylaniline moiety expressed as amitraz), dexamethasone, prednisolone and nicotine (Table 4). Amitraz and nicotine residues may also arise from the use of this substance as pesticide. It is important to note that 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 other pharmacologically active substances non-compliant results (B2f)

Residue definition	Species/Product	Country reporting non-compliant results at residue definition level	Number of non-compliant results
Amitraz (amitraz including the metabolites containing the 2,4 -dimethylaniline moiety expressed as amitraz)	Honey	Cyprus	1
Dexamethasone	Bovines	France	1
Dexamethasone	Bovines	Germany	6
Dexamethasone	Bovines	Ireland	1
Dexamethasone	Bovines	Italy	5
Dexamethasone	Bovines	Poland	1
Nicotine	Poultry	Germany	2
Prednisolone	Bovines	Spain	2

3.1.6. Other substances and environmental contaminants

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

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

In the 2020, 45,899 samples were analysed for substances in group B3 of which 542 samples were non-compliant (1.18%) (637 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 for almost all species in the subgroup B3c 'chemical elements' (3.71%). Similar to previous years, copper, cadmium, total mercury and lead being most frequently identified as responsible for non-compliance. Copper compounds are also the most frequently quantified pesticides in food products (EFSA, 2021c); these compounds are no longer used as pesticides, but its presence is coming from other sources such as use of feed supplements.

Instances of non-compliance for organochlorine compounds (B3a) and organophosphorus compounds (B3b) were 0.1% and 0.01%, respectively. The occurrence of organochlorine compounds in products of animal origin arises mainly from these persistent residues in the environment (e.g. in soil) that are e.g.

taken-up by vegetables crops fed to animals; thus, the overall reduction in the non-compliant rate observed for these contaminates over the last monitoring years may be ascribed to their environmental degradation and because these substances are no longer in use. To be noted that environmental organochlorinated contaminants due past uses as pesticides (e.g. DDT) constituted the main findings in animal products also in the context of pesticide monitoring activities carried out in Europe in 2019 and previous years in the frame of the pesticide residues Regulation (EC) 396/2005 (EFSA, 2021c). Organophosphorus compounds are also used as plant protection products and their residues in animals/products of animal origin may arise from plant-based feed.

There were non-compliant samples reported in subgroup B3d mycotoxins (n = 11; 0.14%), for pigs (0.21%), horses (2.27%) and milk (0.26%). Those identified being zearalenone, aflatoxin M1 and ochratoxin A. The similar rate of samples non-compliance that was observed in the last three years of control activities is partly because these residues are naturally occurring from fungi belonging to the genus *Fusarium* and hence found as contaminants in feed.

Dyes (B3e) were reported in aquaculture (11 non-compliant samples; 0.61%). Substances found were sum of crystal violet and leucocrystal violet and sum of malachite green and leuco-malachite green. The use of these dyes is forbidden in the EU for use in food production, but their residues can originate from background concentration in fish feed such as processed animal proteins; these dyes can then persist in fatty fish tissues for long time.

There were non-compliant samples reported in residue subgroup B3f 'Others' (n = 2; 0.04%), for honey (0.15%) and pigs (0.11%). Those identified being acetamiprid and fipronil, two substances that are used also as plant protection products (pesticides).

The highest uncertainty of the estimated proportions of non-compliant samples were observed for dyes (B3e) and chemical elements (B3c) respectively.

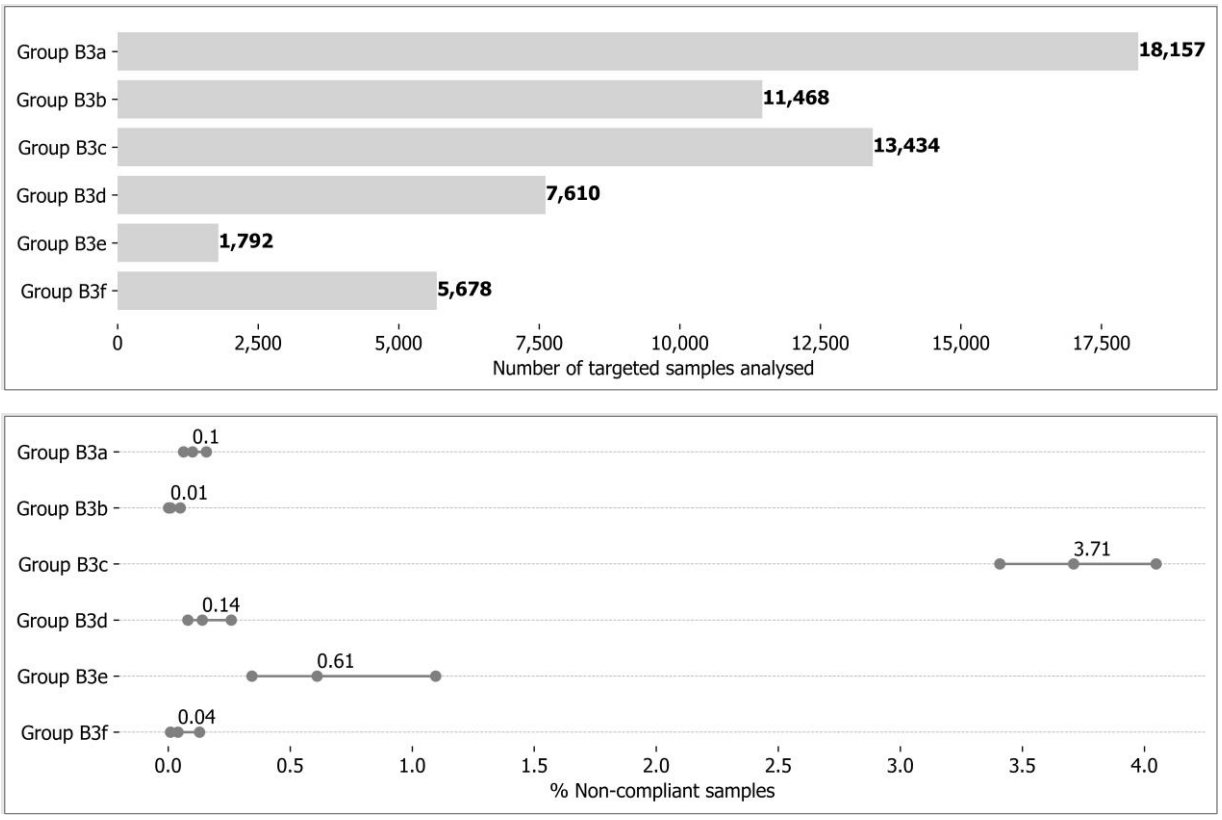


Figure 4: Number of samples analysed within the group 'other substances and environmental contaminants' (B3) and the percentage of non-compliant samples (with confidence intervals)

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

Group	B3a % NC	B3a Samples	B3b % NC	B3b Samples	B3c % NC	B3c Samples	B3d % NC	B3d Samples	B3e % NC	B3e Samples	B3f % NC	B3f Samples
Aquaculture	0.11	915	-	237	0.36	560	-	327	0.62	1,774	-	541
Bovines	0.03	2,889	-	1,780	6.16	2,501	-	1,791	-	0	-	694
Eggs	0.17	1,793	-	1,177	-	131	-	4	-	0	-	1,221
Game (Farmed Game)	-	145	-	54	6.86	350	-	19	-	0	-	35
Game (Wild Game)	5.59	179	-	40	7.08	2,007	-	0	-	0	-	30
Honey	-	803	-	792	8.06	459	-	5	-	0	0.15	684
Horses	-	188	-	111	2.08	432	2.27	88	-	0	-	52
Milk	-	1,515	-	1,862	-	626	0.26	1,568	-	18	-	318
Pigs	0.04	5,338	-	3,206	2.09	4,070	0.21	2,337	-	0	0.11	878
Poultry	0.03	3,333	-	1,662	0.18	1,644	-	1,232	-	0	-	980
Rabbits	-	85	-	43	-	78	-	16	-	0	-	13
Sheep/goats	-	974	0.2	504	7.47	576	-	223	-	0	-	232

%NC: percentage of non-compliant samples;

'-': indicates that all samples were compliant.

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

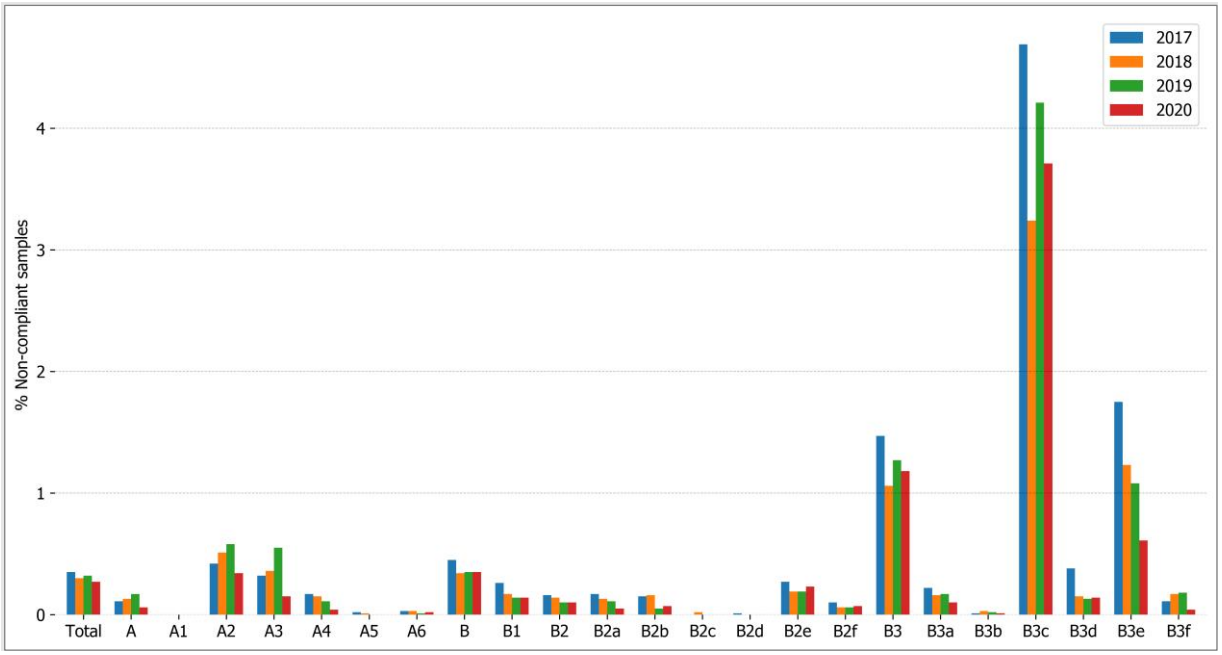
3.1.7. Multi-year comparison

As this is the fourth year that the monitoring data were reported to EFSA using the SSD (Version 2.0) format (see Section on Data and Methodologies), comparisons have been performed only between the results from 2017, 2018, 2019 and 2020. Detailed comparisons with those from earlier years have not been performed due to differences in the reporting and calculation methods. It is important to note that the number of samples analysed for each substance and animal/product category was not necessarily the same over the 4-year period. Furthermore, this is the second year that the results data from Iceland and Norway have been included in the annual report. In addition, the 2019 data from Malta were not submitted in time to be included in this report and for the first time in 2020 the United Kingdom data are not addressed in the presented data analysis. Therefore, this analysis should be regarded as having a certain degree of uncertainty when it comes to results comparability over the time.

The purpose of this exercise was to check whether major variations of the proportion of non-compliant samples occurred at substance group level overall. 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.

Overall, the percentage of non-compliant samples in 2020 (0.19%) was lower compared to the previous 11 years (0.25%-0.37%). A slightly decrease was observed also for the number of reported samples, 620,758 in 2020 compared to 671,642 in 2019. This decrease is partially due to constrains faced by some countries because of the Covid19 pandemic situation.

For targeted samples in 2020 the percentage of non-compliant (0.27%) was also lower compared to the previous 3 years (0.30%-0.35%). Compared to the results from 2017, 2018 and 2019, in 2020 the frequency of non-compliant results was decreased for antithyroid agents (A2), steroids (A3) and resorcylic acid lactones (A4). For prohibited substances (A6), compared to 2019 the frequency on non-compliance in 2020 was higher, although lower compared to 2017 and 2018. For chemical elements (including metals) (B3c), compared to 2017 and 2019, the frequency on non-compliance in 2020 was lower, although higher compared to 2018. Decreases were noted for anthelmintics (B2a), organochlorine compounds (B3a), organophosphorus compounds (B3b), dyes (B3e) and 'other substances' (B3f), compared to 2017, 2018 and 2019 results. For anticoccidials (B2b), non-steroidal anti-inflammatory drugs (NSAIDs) (B2e), 'other pharmacologically active substances' (B2f) and mycotoxins (B3d), compared to 2019 the frequency on non-compliance was higher while lower for other substances and environmental contaminants (B3). For the other substance groups, there were no notable variations (see Figure 5).



Year	Total	A	A1	A2	A3	A4	A5	A6	B	B1	B2	B2a	B2b	B2c	B2d	B2e	B2f	B3	B3a	B3b	B3c	B3d	B3e	B3f
2017	0.35	0.11	-	0.42	0.32	0.17	0.02	0.03	0.45	0.26	0.16	0.17	0.15	-	0.01	0.27	0.10	1.47	0.22	0.01	4.69	0.38	1.75	0.11
2018	0.30	0.13	-	0.51	0.36	0.15	0.01	0.03	0.34	0.17	0.14	0.13	0.16	0.02	-	0.19	0.06	1.06	0.16	0.03	3.24	0.15	1.23	0.17
2019	0.32	0.17	-	0.58	0.55	0.11	-	0.01	0.35	0.14	0.10	0.11	0.05	-	-	0.19	0.06	1.27	0.17	0.02	4.21	0.13	1.08	0.18
2020	0.27	0.06	-	0.34	0.15	0.04	0.00 (a)	0.02	0.35	0.14	0.10	0.05	0.07	-	-	0.23	0.07	1.18	0.10	0.01	3.71	0.14	0.61	0.04

(a): A percentage of 0.00 indicates at least one non-compliant sample (i.e. the actual percentage is lower than 0.00), while '-' indicates that all samples were compliant.

Figure 5: Percentage of non-compliant samples reported in relation to the total number of targeted samples analysed for the respective group in 2017 - 2020 (substance groups are detailed in Appendix E)

3.2. Bovines

Council Directive 96/23/EC requires that the minimum number of bovine animals to be controlled each year for all kinds of residues and substances is 0.4% of the bovine animals slaughtered the previous year. Overall, the minimum requirements for the number of samples were almost fulfilled in 2020 (Table 6). Bulgaria, France, Greece, Hungary, Latvia, Luxembourg, Netherlands, Poland, Portugal, Romania, Spain and Sweden did not achieve the minimum sampling frequency for bovines, even though seven of them deviated of only 0.01-0.04 percent point from the target requirement of 0.4 (Table 7).

Table 6: Production of bovines and number of targeted samples over 2007–2020

Year	Production (animals)	Targeted samples	% Animals tested[a]	Minimum 96/23/EC
2007 (EU 27)	27,087,367	129,201	0.47	0.4
2008 (EU 27)	26,898,702	122,648	0.48	
2009 (EU 27)	26,677,946	127,897	0.48	
2010 (EU 27)	26,267,917	128,130	0.48	
2011 (EU 27)	26,566,593	126,540	0.48	
2012 (EU 27)	25,759,645	130,554	0.49	
2013 (EU 28)	25,481,237	126,307	0.49	
2014 (EU 28)	25,315,582	125,552	0.49	
2015 (EU 28)	25,463,018	127,187	0.50	
2016 (MS 27)[b]	21,414,980	109,881	0.53	
2016 (EU 28)	26,099,292			
2017 (EU 28)	26,394,612	102,647	0.39	
2018 (EU 28)	26,688,499	100,784	0.38	
2018 (EU 27, IS, NO)[c]	26,814,009			
2019 (EU 27, IS, NO)[c]	26,913,406	106,651	0.40	
2020 (EU 27, IS, NO)[d]	24,118,545	94,421	0.39	

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

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

(c): data from Malta were not available for inclusion in the 2019 results report; IS: Iceland; NO: Norway;

(d): data from United Kingdom were not included in the 2020 results report; IS: Iceland; NO: Norway.

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

Country	Production data (animals)[a]	Number of samples 2020	% Animal tested
Austria	680,528	3,761	0.55
Belgium	890,935	6,030	0.68
Bulgaria	26,698	105	0.39
Croatia	182,264	795	0.44
Cyprus	17,250	129	0.75
Czechia	241,408	1,506	0.62
Denmark	492,605	1,977	0.40
Estonia	35,036	176	0.50

Country	Production data (animals)[a]	Number of samples 2020	% Animal tested
Finland	273,714	1,148	0.42
France	4,708,117	15,121	0.32
Germany	3,414,562	13,491	0.40
Greece	133,663	363	0.27
Hungary	111,384	291	0.26
Iceland	22,728	98	0.43
Ireland	1,884,729	7,627	0.40
Italy	2,663,823	12,791	0.48
Latvia	71,115	279	0.39
Lithuania	158,295	693	0.44
Luxembourg	27,846	102	0.37
Malta	4,086	137	3.35
Netherlands	2,188,468	6,392	0.29
Norway	298,013	1,303	0.44
Poland	1,948,287	7,004	0.36
Portugal[b]	378,487	167	0.04
Romania	229,749	898	0.39
Slovakia	30,073	324	1.08
Slovenia	116,495	511	0.44
Spain	2,462,557	9,555	0.39
Sweden	425,630	1,647	0.39
TOTAL	**24,118,545**	**94,421**	**0.39**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	62,202	65.88	56	0.09	60
A1	11,547	12.23	0	-	0
A2	5,304	5.62	29	0.55	29
A3	21,957	23.25	25	0.11	28
A4	10,112	10.71	1	0.01	2
A5	18,223	19.30	1	0.01	1
A6	18,700	19.80	0	-	0
B	49,735	52.67	240	0.48	262
B1	19,392	20.54	44	0.23	53
B2	26,299	27.85	41	0.16	50
B2a	6,749	7.15	4	0.06	5
B2b	3,516	3.72	0	-	0

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
B2c	1,753	1.86	0	-	0
B2d	1,616	1.71	0	-	0
B2e	5,078	5.38	22	0.43	29
B2f	11,815	12.51	16	0.14	16
B3	7,845	8.31	155	1.98	159
B3a	2,889	3.06	1	0.03	4
B3b	1,780	1.89	0	-	0
B3c	2,501	2.65	154	6.16	155
B3d	1,791	1.90	0	-	0
B3e[f]					
B3f	694	0.74	0	-	0
Total	**94,421**	**100.00**	**296**	**0.31**	**322**

(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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

The distribution of samples analysed, non-compliant samples and non-compliant results in bovines are presented in Table 8. Of the 94,421 samples analysed in this category, 296 (0.31%) were non-compliant (322 non-compliant results). The non-compliant samples were reported by 18 countries.

There were no non-compliant samples reported in group A1, A6, B2b-d, B3b, B3d and B3f.

In the group A2, six countries reported a total of 29 non-compliant samples (29 non-compliant results), all for thiouracil.

In the group A3, a total of 25 non-compliant samples (28 non-compliant results) were reported by nine countries. Among the substances identified, the highest number of non-compliant results were noted for testosterone-17-Beta (n=15).

In Group A4, there was 1 non-compliant sample and 2 results, reported for Beta and Alpha Zearalanol, by one country.

For antibacterials (B1), 11 countries reported a total of 44 non-compliant samples (53 non-compliant results).

In Group B2, there were 4 non-compliant samples (5 non-compliant results) for anthelmintics (B2a), 22 non-compliant samples (29 non-compliant results) were reported by six countries for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e). Meloxicam was the most frequently reported substance in B2e (n = 12 non-compliant results).

In the group B3, there were 154 non-compliant samples and 155 results for chemical elements (including heavy metals) (B3c), and sample and results for Organochlorine compounds, including PCBs (B3a).

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

3.3. Pigs

Council Directive 96/23/EC requires that the minimum number of pigs that have to be controlled each year for all kinds of residues and substances is 0.05% of the pigs slaughtered the previous year. Overall, the minimum requirements for the number of samples to be taken were fulfilled in 2020 (Table 9). Belgium, France, Greece, Hungary, Luxembourg, Poland and Portugal did not achieve the minimum sampling frequency for pigs, even though most of them deviated of only 0.01-0.02 percent point from the target requirement of 0.05 (Table 10).

Table 9: Production of pigs and number of targeted samples over 2007–2020

Year	Production (animals)	Targeted samples	% Animals tested[a]	Minimum 96/23/EC
2007 (EU 27)	241,501,638	144,378	0.06	0.05
2008 (EU 27)	244,965,996	137,281	0.06	
2009 (EU 27)	242,260,526	138,137	0.06	
2010 (EU 27)	245,149,546	136,792	0.06	
2011 (EU 27)	249,082,904	133,255	0.05	
2012 (EU 27)	246,691,569	135,745	0.05	
2013 (EU 28)	243,680,241	131,565	0.05	
2014 (EU 28)	244,508,972	135,129	0.06	
2015 (EU 28)	251,197,203	130,012	0.05	
2016 (MS 27)[b]	229,09 0,419	121,953	0.05	
2016 (EU 28)	252,921,158			
2017 (EU 28)	252,107,558	125,810	0.05	
2018 (EU 28)	260,530,951	120,434	0.05	
2018 (EU 27, IS, NO)[c]	257,079,739			
2019 (EU 27, IS, NO)[c]	256,267,449	120,944	0.05	
2020 (EU 27, IS, NO)[d]	245,193,720	115,818	0.05	

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

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

(c): data from Malta were not available for inclusion in the 2019 results report; IS: Iceland; NO: Norway;

(d): data from United Kingdom were not included in the 2020 results report; IS: Iceland; NO: Norway.

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

Country	Production data (animals)[a]	Number of samples 2020	% Animal tested
Austria	5,063,302	3,212	0.06
Belgium	11,260,012	5,048	0.04
Bulgaria	1,184,421	576	0.05
Croatia	1,028,506	631	0.06
Cyprus	576,712	312	0.05
Czechia	2,110,288	1,919	0.09

Country	Production data (animals)[a]	Number of samples 2020	% Animal tested
Denmark	17,300,000	8,556	0.05
Estonia	537,632	515	0.10
Finland	1,819,043	1,410	0.08
France	23,457,699	9,464	0.04
Germany	54,638,711	27,929	0.05
Greece	1,177,059	420	0.04
Hungary	4,119,742	1,355	0.03
Iceland	79,046	45	0.06
Ireland	3,451,212	1,989	0.06
Italy	11,494,892	5,333	0.05
Latvia	470,288	230	0.05
Lithuania	933,802	450	0.05
Luxembourg	155,773	69	0.04
Malta	55,202	160	0.29
Netherlands	15,572,931	7,220	0.05
Norway	1,648,097	862	0.05
Poland	21,513,924	9,045	0.04
Portugal[b]	5,666,562	406	0.01
Romania	4,063,627	2,126	0.05
Slovakia	620,591	370	0.06
Slovenia	259,406	156	0.06
Spain	52,289,200	24,694	0.05
Sweden	2,646,040	1,316	0.05
TOTAL	**245,193,720**	**115,818**	**0.05**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	65,217	56.31	21	0.03	34
A1	6,670	5.76	0	-	0
A2	3,495	3.02	2	0.06	2
A3	10,104	8.72	10	0.10	13
A4	5,374	4.64	4	0.07	12
A5	10,159	8.77	0	-	0
A6	38,226	33.01	5	0.01	7
B	80,947	69.89	139	0.17	198
B1	36,262	31.31	42	0.12	65
B2	39,961	34.50	4	0.01	4

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
B2a	10,391	8.97	2	0.02	2
B2b	10,292	8.89	1	0.01	1
B2c	2,652	2.29	0	-	0
B2d	6,035	5.21	0	-	0
B2e	8,280	7.15	1	0.01	1
B2f	9,596	8.29	0	-	0
B3	12,814	11.06	93	0.73	129
B3a	5,338	4.61	2	0.04	12
B3b	3,206	2.77	0	-	0
B3c	4,070	3.51	85	2.09	111
B3d	2,337	2.02	5	0.21	5
B3e[f]					
B3f	878	0.76	1	0.11	1
Total	**115,818**	**100.00**	**157**	**0.14**	**232**

(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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

The distribution of samples analysed, non-compliant samples and non-compliant results in pigs are presented in Table 11. Of the 155,818 samples analysed in this category, 157 (0.14%) were non-compliant (232 non-compliant results). The non-compliant samples were reported by 20 countries.

There were no non-compliant samples reported in group A1, A5, B2c, B2d, B2f and B3b.

In group A, two non-compliant samples and two results were reported for antithyroid agents (A2) for thiouracil, by one country. In the group A3, 10 non-compliant samples and 13 non-compliant results were reported for steroids (A3) for boldenone, boldenone-alpha, nandrolone, normethandrolone, progesterone and progesterone-17-alpha-hydroxy, by 5 countries. In the group A4, 4 non-compliant samples and 12 results were reported for alpha-zearalenol, beta-zearalenol, zearalanone, zearalanone alpha and zearalanone beta by two countries. In Group A6, three countries reported 5 non-compliant samples and 7 non-compliant results; four results for chloramphenicol and one result for metronidazole, hydroxymetronidazol and semicarbazide).

For antibacterials (B1), 15 countries reported a total of 42 non-compliant samples (65 non-compliant results).

In group B2, there were two non-compliant samples (two non-compliant results) for anthelmintics (B2a), one non-compliant sample (one non-compliant result) for anticoccidials (B2b) and one non-compliant sample and result was reported for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e).

In the group B3, there were 85 non-compliant samples (111 non-compliant results) for chemical elements (B3c), reported by seven countries. In addition, non-compliant results were reported by two countries for B3d (zearalenone n=3 and ochratoxin A n = 2), two and 12 non-compliant samples and

results were reported for organochlorine compounds, including PCBs (B3a), and one non-compliant sample and result was reported for 'other substances' (B3f).

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

3.4. Sheep and goats

Council Directive 96/23/EC requires that the minimum number of sheep and goats that have to be controlled each year for all kinds of results 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 2020, overall (Table 12). Bulgaria, France, Hungary, Latvia and Portugal did not achieve the minimum sampling frequency for sheep and goats, even though most of them deviated of only 0.01-0.02 percent point from the target requirement of 0.05 (Table 13).

Table 12: Production of sheep and goats and number of targeted samples over 2007–2020

Year	Production (animals)	Targeted samples	% Animals tested[a]	Minimum 96/23/EC
2007 (EU 27)	40,935,665	26,599	0.06	0.05
2008 (EU 27)	41,435,268	24,320	0.06	
2009 (EU 27)	39,584,954	26,265	0.06	
2010 (EU 27)	36,121,283	23,894	0.06	
2011 (EU 27)	37,217,484	23,112	0.06	
2012 (EU 27)	36,558,080	23,441	0.06	
2013 (EU 28)	35,831,474	22,761	0.06	
2014 (EU 28)	36,188,624	26,218	0.07	
2015 (EU 28)	31,554,480	21,420	0.06	
2016 (MS 27)[b]	26,783,426	16,846	0.06	
2016 (EU 28)	31,274,756			
2017 (EU 28)	31,160,255	16,348	0.05	
2018 (EU 28)	32,094,485	15,927	0.05	
2018 (EU 27, IS, NO)[c]	34,092,932			
2019 (EU 27, IS, NO)[c]	34,546,310	18,257	0.05	
2020 (EU 27, IS, NO)[d]	19,947,609	10,465	0.05	

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

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

(c): data from Malta were not available for inclusion in the 2019 results report; IS: Iceland; NO: Norway;

(d): data from United Kingdom were not included in the 2020 results report; IS: Iceland; NO: Norway

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

Country	Production data (animals)[a]	Number of samples 2020	% Animal tested
Austria	186,136	335	0.18
Belgium	147,609	194	0.13
Bulgaria	237,815	85	0.04
Croatia	88,070	61	0.07

Country	Production data (animals)[a]	Number of samples 2020	% Animal tested
Cyprus	288,086	160	0.06
Czechia	19,403	77	0.40
Denmark	77,459	59	0.08
Estonia	9,466	21	0.22
Finland	64,458	44	0.07
France	4,295,790	1,820	0.04
Germany	1,139,227	565	0.05
Greece	456,521	230	0.05
Hungary	60,138	21	0.03
Iceland	559,596	290	0.05
Ireland	3,297,564	1,778	0.05
Italy	1,193,237	800	0.07
Latvia	31,310	13	0.04
Lithuania	12,127	15	0.12
Luxembourg	2,554	12	0.47
Malta	6,995	104	1.49
Netherlands	707,463	329	0.05
Norway	1,404,934	719	0.05
Poland	70,281	92	0.13
Portugal[b]	885,953	48	0.01
Romania	1,001,822	533	0.05
Slovakia	79,951	127	0.16
Slovenia	13,899	38	0.27
Spain	3,329,555	1,766	0.05
Sweden	280,190	129	0.05
TOTAL	**19,947,609**	**10,465**	**0.05**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

The distribution of samples analysed, non-compliant samples and non-compliant results in sheep and goats is presented in Table 14. Of the 10,465 samples analysed in this category, 79 (0.75%) were non-compliant (91 non-compliant results). The non-compliant samples were reported by 11 countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	3,498	33.43	27	0.77	31
A1	285	2.72	0	-	0
A2	201	1.92	4	1.99	4
A3	496	4.74	21	4.23	25

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A4	331	3.16	0	-	0
A5	472	4.51	0	-	0
A6	2,148	20.53	2	0.09	2
B	8,718	83.31	52	0.60	60
B1	3,660	34.97	4	0.11	6
B2	3,663	35.00	4	0.11	4
B2a	1,722	16.45	4	0.23	4
B2b	614	5.87	0	-	0
B2c	542	5.18	0	-	0
B2d	303	2.90	0	-	0
B2e	475	4.54	0	-	0
B2f	667	6.37	0	-	0
B3	1,962	18.75	44	2.24	50
B3a	974	9.31	0	-	0
B3b	504	4.82	1	0.20	1
B3c	576	5.50	43	7.47	49
B3d	223	2.13	0	-	0
B3e[f]					
B3f	232	2.22	0	-	0
Total	**10,465**	**100.00**	**79**	**0.75**	**91**

(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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

There were no non-compliant samples reported in group A1, A4, A5, B2b-f, B3a, B3d and B3f.

In group A, four non-compliant samples and results were reported against antithyroid agents (A2) for thiouracil, by two countries. For steroids (A3), 21 non-compliant samples and 25 non-compliant results were reported (boldenone/boldenone-alpha (n = 12), epinandrolone (n =13)), by four countries. In group A6, one country reported two non-compliant samples and results for semicarbazide.

For antibacterials (B1), three countries reported a total of four non-compliant samples and six non-compliant results in total. The substance with the highest number of non-compliant results was dihydrostreptomycin (n = 3).

In the group B2, four non-compliant samples and results were reported for anthelmintics (B2a), by three countries. The substance with the highest number of non-compliant results was closantel (n = 3).

In the group B3, 43 non-compliant samples and 49 non-compliant results were reported, for heavy metals (B3c), and one non-compliant sample and residue was reported for organophosphorus compounds (B3b).

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

3.5. Horses

For horses, Council Directive 96/23/EC requires that the number of samples is to be determined by each country in relation to potentially identified problems. The number of targeted samples taken overall in 2020, was similar to previous years (Table 15). The percentage of targeted samples taken in each country for the reported horse production is presented in Table 16.

Table 15: Production of horses and number of targeted samples over 2007–2020

Year	Production (animals)	Targeted samples	% Animals tested[a]	Minimum 96/23/EC
2007 (EU 27)	312,969	3,115	1.16	Not specified
2008 (EU 27)	386,302	2,545	0.81	
2009 (EU 27)	264,538	3,000	0.78	
2010 (EU 27)	258,362	3,094	1.17	
2011 (EU 27)	249,403	3,309	1.28	
2012 (EU 27)	272,286	3,850	1.54	
2013 (EU 28)	284,035	4,453	1.63	
2014 (EU 28)	215,629	4,112	1.45	
2015 (EU 28)	190,540	3,749	1.74	
2016 (MS 27)[b]	177,309	3,320	1.90	
2016 (EU 28)	191,678			
2017 (EU 28)	186,330	3,232	1.69	
2018 (EU 28)	174,721	3,137	1.68	
2018 (EU 27, IS, NO)[c]	182,545			
2019 (EU 27, IS, NO)[c]	189,134	3,248	1.78	
2020 (EU 27, IS, NO)[d]	186,504	2,640	1.42	

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

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

(c): data from Malta were not available for inclusion in the 2019 results report; IS: Iceland; NO: Norway;

(d): data from United Kingdom were not included in the 2020 results report; IS: Iceland; NO: Norway

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

Country	Production data (animals)[a]	Number of samples 2020	% Animal tested
Austria	564	65	11.52
Belgium	5,950	352	5.92
Bulgaria	175	16	9.14
Croatia	269	27	10.04
Cyprus	0		
Czechia	101	33	32.67

Country	Production data (animals)[a]	Number of samples 2020	% Animal tested
Denmark	1,354	60	4.43
Estonia	15		
Finland	1,171	40	3.42
France	8,548	316	3.70
Germany	5,625	104	1.85
Greece	0		
Hungary	783		
Iceland	9,229	44	0.48
Ireland	6,638	149	2.24
Italy	39,643	484	1.22
Latvia	60	10	16.67
Lithuania	652	15	2.30
Luxembourg	0		
Malta	2		
Netherlands	2,409	56	2.32
Norway	212	50	23.58
Poland	23,827	288	1.21
Portugal[b]	825	1	0.12
Romania	33,722	242	0.72
Slovakia	0		
Slovenia	1,172	39	3.33
Spain	41,438	120	0.29
Sweden	2,120	129	6.08
TOTAL	**185,704**	**2,640**	**1.42**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

Countries with no targeted samples for the specific product group were not included in the total count.

The distribution of samples analysed, non-compliant samples and non-compliant results in horses is presented in Table 17. Of the 2,640 samples analysed in this category, 17 samples (0.64%) were non-compliant (29 non-compliant results). The non-compliant samples were reported by 10 countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	871	32.99	3	0.34	10
A1	107	4.05	0	-	0
A2	66	2.50	0	-	0
A3	162	6.14	1	0.62	2
A4	129	4.89	2	1.55	8
A5	202	7.65	0	-	0

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A6	371	14.05	0	-	0
B	2,194	83.11	16	0.73	19
B1	424	16.06	0	-	0
B2	1,171	44.36	5	0.43	5
B2a	230	8.71	0	-	0
B2b	104	3.94	0	-	0
B2c	145	5.49	0	-	0
B2d	164	6.21	0	-	0
B2e	427	16.17	5	1.17	5
B2f	247	9.36	0	-	0
B3	751	28.45	11	1.46	14
B3a	188	7.12	0	-	0
B3b	111	4.20	0	-	0
B3c	432	16.36	9	2.08	12
B3d	88	3.33	2	2.27	2
B3e[f]					
B3f	52	1.97	0	-	0
Total	**2,640**	**100.00**	**17**	**0.64**	**29**

(a): as detailed in Appendix E;

(b): number of samples analysed for one or more substances of the respective group;

(c): number of non-compliant samples for one or more substances in the respective group;

(d): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

In group A, there was one non-compliant sample (two non-compliant results) for steroids (A3). For resorcylic acid lactones (A4), two non-compliant samples (eight non-complaint results) were reported by one country.

In the group B2, five non-compliant samples and results were reported for NSAIDs (B2e).

In the group B3, nine non-compliant samples and 12 non-compliant results were reported for the chemical compounds subgroup B3c, and two non-compliant samples and results were reported for the subgroup B3d.

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

3.6. Poultry

According to Directive 96/23/EC, the minimum number of samples for each category of poultry must be one per 200 t of annual production, with a minimum of 100 samples for each group of substances where annual production in the category concerned is over 5,000 t. Overall, the minimum requirement of one sample analysed per 200 t production was not achieved in 2020, even if very close (Table 18).

The percentage of targeted samples taken in each country for the reported production of poultry is given in Table 19. Bulgaria, Finland, France, Greece, Hungary, Lithuania, Netherlands, Poland, Portugal and Spain did not achieve this requirement, even though four of them were very close to the target requirement of 1/200 t and all of them fulfilled the requirement of minimum 100 samples.

Table 18: Production of poultry and number of targeted samples over 2007–2020

Year	Production (t)	Targeted samples	% Samples tested/ 200 t[(a)]	Minimum 96/23/EC
2007 (EU 27)	10,912,500	62,101	1.15	1/200 t
2008 (EU 27)	12,421,566	60,406	1.11	
2009 (EU 27)	11,383,434	61,989	1.00	
2010 (EU 27)	11,804,262	61,259	1.08	
2011 (EU 27)	12,417,108	65,942	1.12	
2012 (EU 27)	12,845,333	68,770	1.11	
2013 (EU 28)	12,930,555	71,186	1.11	
2014 (EU 28)	12,909,837	72,486	1.12	
2015 (EU 28)	13,394,013	71,223	1.10	
2016 (MS 27)[(b)]	12,239,495	64,501	1.10	
2016 (EU 28)	13,906,572			
2017 (EU 28)	14,320,889	67,630	0.97	
2018 (EU 28)	14,683,847	69,096	0.96	
2018 (EU 27, IS, NO)[(c)]	14,789,918			
2019 (EU 27, IS, NO)[(c)]	15,186,857	73,088	0.99	
2020 (EU 27, IS, NO)[(d)]	13,266,022	61,848	0.93	

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

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

(c): data from Malta were not available for inclusion in the 2019 results report; IS: Iceland; NO: Norway;

(d): data from United Kingdom were not included in the 2020 results report; IS: Iceland; NO: Norway

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

Country	Production data (tons)[(a)]	Number of samples 2020	Samples tested/200 t
Austria	133,598	834	1.25
Belgium	398,162	2,044	1.03
Bulgaria	112,867	480	0.85
Croatia	53,642	376	1.40
Cyprus	21,839	253	2.32
Czechia	150,059	1,001	1.33

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/200 t
Denmark	152,419	783	1.03
Estonia	19,059	200	2.10
Finland	134,858	629	0.93
France	1,666,629	7,513	0.90
Germany	1,573,192	9,021	1.15
Greece	229,896	553	0.48
Hungary	731,720	2,819	0.77
Iceland	9,590	225	4.69
Ireland	180,843	1,413	1.56
Italy	1,314,000	6,647	1.01
Latvia	34,000	184	1.08
Lithuania	84,943	419	0.99
Luxembourg	0		
Malta	3,676	129	7.02
Netherlands	967,334	4,109	0.85
Norway	100,263	675	1.35
Poland	2,356,607	9,289	0.79
Portugal[b]	356,405	316	0.18
Romania	526,886	2,669	1.01
Slovakia	103,763	619	1.19
Slovenia	63,661	339	1.07
Spain	1,636,821	7,527	0.92
Sweden	149,290	782	1.05
TOTAL	**13,266,022**	**61,848**	**0.93**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA;

Countries with no targeted samples for the specific product group were not included in the total count.

The distribution of samples analysed, non-compliant samples and non-compliant results in poultry are presented in Table 20. Of the 61,848 samples analysed in this category, 24 (0.04%) were non-compliant (26 non-compliant results). The non-compliant samples were reported by 11 countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	36,136	58.43	2	0.01	2
A1	2,816	4.55	0	-	0
A2	1,097	1.77	0	-	0
A3	5,076	8.21	0	-	0
A4	2,919	4.72	0	-	0
A5	4,923	7.96	0	-	0

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A6	22,208	35.91	2	0.01	2
B	38,420	62.12	22	0.06	24
B1	15,724	25.42	7	0.04	7
B2	19,933	32.23	11	0.06	12
B2a	4,073	6.59	1	0.02	1
B2b	11,824	19.12	7	0.06	8
B2c	2,536	4.10	0	-	0
B2d	91	0.15	0	-	0
B2e	2,314	3.74	1	0.04	1
B2f	2,770	4.48	2	0.07	2
B3	6,972	11.27	4	0.06	5
B3a	3,333	5.39	1	0.03	1
B3b	1,662	2.69	0	-	0
B3c	1,644	2.66	3	0.18	4
B3d	1,232	1.99	0	-	0
B3e[f]					
B3f	980	1.58	0	-	0
Total	**61,848**	**100.00**	**24**	**0.04**	**26**

(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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

In group A, there were two non-compliant samples and results for group A6 (nitrofurazone and metronidazole), by two countries.

For antibacterials (B1), five countries reported a total of seven non-compliant samples and results.

In the group B2, seven non-compliant samples and eight non-compliant results were reported for anticoccidials (B2b), two non-compliant samples and results were reported for 'other pharmacologically active substances' (B2f), and one non-compliant sample and result was reported for both, NSAIDs (B2e) and anthelmintics (B2a).

In the group B3, one non-compliant sample and result was reported for both organochlorine compounds (B3a) and three non-compliant samples and four non-compliant results were reported under chemical elements (B3c) (copper, cadmium and lead).

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

3.7. Aquaculture

Directive 96/23/EC specifies that the minimum number of samples to be collected each year must be at least one per 100 tonnes of annual production. Overall, the minimum requirements for the number of samples to be taken were not fulfilled in 2020 (Table 21). The production volume and the number of samples analysed in each country, are given in Table 22. Bulgaria, France, Greece, Hungary, Ireland, Latvia, Malta, Norway, Portugal, Spain and Sweden did not analyse at least one sample/100 tonnes (t) of production, even though one of them was very close to the target requirement of 1/100 t.

Table 21: Production of aquaculture and number of targeted samples over 2007–2020

Year	Production (t)	Targeted samples	% Samples tested/ 100 t[(a)]	Minimum 96/23/EC
2007 (EU 27)	602,555	9,257	1.50	1/100 t
2008 (EU 27)	644,875	8,751	1.40	
2009 (EU 27)	627,109	8,606	1.30	
2010 (EU 27)	622,032	8,668	1.40	
2011 (EU 27)	655,772	8,241	1.30	
2012 (EU 27)	631,117	8,264	1.30	
2013 (EU 28)	614,191	7,971	1.30	
2014 (EU 28)	608,658	7,236	1.20	
2015 (EU 28)	633,541	7,246	1.20	
2016 (MS 27)[(b)]	603,868	6,735	1.10	
2016 (EU 28)	645,068			
2017 (EU 28)	668,766	6,500	1.00	
2018 (EU 28)	692,821	6,482	0.97	
2018 (EU 27, IS)[(c)]	709,535			
2019 (EU 27, IS)[(c)]	713,932	6,759	0.95	
2020 (EU 27, IS, NO)[(d)]	1,868,224	8,177	0.44	

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

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

(c): data from Malta were not available for inclusion in the 2019 results report; IS: Iceland; NO: Norway;

(d): data from United Kingdom were not included in the 2020 results report; IS: Iceland; NO: Norway

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

Country	Production data (tons)[(a)]	Number of samples 2020	Samples tested/100 t
Austria	4,086	227	5.56
Belgium	2,000	119	5.95
Bulgaria	10,405	99	0.95
Croatia	16,506	175	1.06
Cyprus	7,314	102	1.39
Czechia	21,751	265	1.22
Denmark	31,925	319	1.00
Estonia	944	19	2.01

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/100 t
Finland	14,323	195	1.36
France	52,880	451	0.85
Germany	18,212	295	1.62
Greece	106,633	536	0.50
Hungary	12,180	75	0.62
Iceland	33,959	344	1.01
Ireland	18,989	120	0.63
Italy	57,850	670	1.16
Latvia	829	6	0.72
Lithuania	3,462	53	1.53
Luxembourg	0		
Malta	2,363	4	0.17
Netherlands	5,471	60	1.10
Norway	1,306,035	2,721	0.21
Poland	36,696	410	1.12
Portugal[b]	10,691	31	0.29
Romania	7,386	81	1.10
Slovakia	1,937	141	7.28
Slovenia	1,938	31	1.60
Spain	70,359	530	0.75
Sweden	11,100	98	0.88
TOTAL	**1,868,224**	**8,177**	**0.44**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA;

Countries with no targeted samples for the specific product group were not included in the total count.

The distribution of samples analysed, non-compliant samples and non-compliant results in aquaculture are presented in Table 23. Of the 8,177 samples analysed for aquaculture, 17 samples (0.21%) and 19 results were non-compliant. The non-compliant samples were reported by nine countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	2,901	35.48	0	-	0
A1	374	4.57	0	-	0
A2	1	0.01	0	-	0
A3	707	8.65	0	-	0
A4	308	3.77	0	-	0
A5	122	1.49	0	-	0
A6	2,074	25.36	0	-	0
B	6,125	74.91	17	0.28	19

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
B1	1,570	19.20	3	0.19	5
B2	1,401	17.13	0	-	0
B2a	799	9.77	0	-	0
B2b	233	2.85	0	-	0
B2c	384	4.70	0	-	0
B2d	41	0.50	0	-	0
B2e	7	0.09	0	-	0
B2f	421	5.15	0	-	0
B3	3,710	45.37	14	0.38	14
B3a	915	11.19	1	0.11	1
B3b	237	2.90	0	-	0
B3c	560	6.85	2	0.36	2
B3d	327	4.00	0	-	0
B3e	1,774	21.69	11	0.62	11
B3f	541	6.62	0	-	0
Total	**8,177**	**100.00**	**17**	**0.21**	**19**

(a): as detailed in Appendix E;

(b): number of samples analysed for one or more substances of the respective group;

(c): number of non-compliant samples for one or more substances in the respective group;

(d): '-' indicates that all samples were compliant;

(e): number of non-compliant results; one sample can be non-compliant for more substances therefore the number of non-compliant results can be higher than the number of non-compliant samples of the same group;

For group A, no non-compliant samples were reported.

In group B1, three non-compliant samples and five non-compliant results were reported by two countries.

In the group B3, 11 non-compliant samples and results, were reported for dyes (B3e) (sum of crystal violet and leucocrystal violet, sum of malachite green and leucomalachite green), by six countries. One non-compliant sample (one residue) was reported for organochlorine compounds (B3a), and two non-compliant samples and results were reported under chemical elements (B3c).

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

3.8. Milk

Commission Decision 97/747/EC lays down that the annual number of samples taken should be one per 15,000 tonnes of annual milk production, with a minimum of 300 samples. Overall, the minimum requirements for the number of samples to be taken, were largely fulfilled in 2020 (Table 24) and by the majority of countries. France, Germany and Portugal did not achieve the first requirement of 1/15,000 t, even though one of them was very close to it. Finland and Hungary did not achieve the minimum number of 300 samples.

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

Table 24: Production of milk and number of targeted samples over 2007–2020

Year	Production (t)	Targeted samples	% Samples tested/ 15,000 t[a]	Minimum 96/23/EC
2007 (EU 27)	142,461,705	51,571	5.30	1/15,000 t
2008 (EU 27)	145,006,173	53,333	5.60	
2009 (EU 27)	141,669,974	54,063	5.60	
2010 (EU 27)	144,705,166	30,372	3.20	
2011 (EU 27)	143,022,677	29,592	3.10	
2012 (EU 27)	149,086,701	30,748	3.20	
2013 (EU 28)	146,446,811	29,788	3.00	
2014 (EU 28)	147,794,431	29,533	3.00	
2015 (EU 28)	150,637,679	26,705	2.70	
2016 (MS 27)[b]	121,134,877	23,934	2.90	
2016 (EU 28)	145,701,788			
2017 (EU 28)	154,860,990	19,451	2.00	
2018 (EU 28)	156,201,391	19,059	1.80	
2018 (EU 27, IS, NO)[c]	157,828,758			
2019 (EU 27, IS, NO)[c]	162,530,463	19,107	1.80	
2020 (EU 27, IS, NO)[d]	147,037,054	18,869	1.92	

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

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

(c): data from Malta were not available for inclusion in the 2019 results report; IS: Iceland; NO: Norway;

(d): data from United Kingdom were not included in the 2020 results report; IS: Iceland; NO: Norway

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

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/15,000 t
Austria	3,423,287	338	1.48
Belgium	3,810,940	647	2.55
Bulgaria	560,137	280	7.50
Croatia	615,900	340	8.28
Cyprus	238,761	481	30.22
Czechia	3,029,015	327	1.62
Denmark	5,299,887	355	1.00

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/15,000 t
Estonia	797,624	429	8.07
Finland	2,261,800	279	1.85
France	24,626,570	1,188	0.72
Germany	31,832,098	2,002	0.94
Greece	1,972,223	522	3.97
Hungary	1,214,819	282	3.48
Iceland	157,153	310	29.59
Ireland	7,898,573	1,406	2.67
Italy	12,079,090	1,455	1.81
Latvia	983,000	585	8.93
Lithuania	1,571,841	306	2.92
Luxembourg	408,000	329	12.10
Malta	43,856	350	119.71
Netherlands	14,209,532	1,618	1.71
Norway	1,518,814	344	3.40
Poland	14,070,649	2,359	2.51
Portugal[b]	1,959,422	36	0.28
Romania	929,694	357	5.76
Slovakia	1,141,794	501	6.58
Slovenia	501,442	357	10.68
Spain	7,120,903	772	1.63
Sweden	2,760,230	314	1.71
TOTAL	**147,037,054**	**18,869**	**1.92**

[a]: The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

[b]: Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

The distribution of samples analysed, non-compliant samples and non-compliant results in milk are presented in Table 26. Of the 18,869 milk samples analysed, 41 (0.22%) were non-compliant (44 non-compliant results). The non-compliant samples were reported by 15 countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	6,735	35.69	4	0.06	7
A1	0	0.00	0	-	0
A2	15	0.08	0	-	0
A3	57	0.30	0	-	0
A4	0	0.00	0	-	0
A5	161	0.85	0	-	0
A6	6,529	34.60	4	0.06	7
B	17,314	91.76	37	0.21	37

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
B1	9,489	50.29	7	0.07	7
B2	9,370	49.66	26	0.28	26
B2a	5,783	30.65	5	0.09	5
B2b	2,626	13.92	0	-	0
B2c	383	2.03	0	-	0
B2d	104	0.55	0	-	0
B2e	5,165	27.37	21	0.41	21
B2f	1,025	5.43	0	-	0
B3	4,867	25.79	4	0.08	4
B3a	1,515	8.03	0	-	0
B3b	1,862	9.87	0	-	0
B3c	626	3.32	0	-	0
B3d	1,568	8.31	4	0.26	4
B3e[f]					
B3f	318	1.69	0	-	0
Total	**18,869**	**100.00**	**41**	**0.22**	**44**

(a): as detailed in Appendix E;

(b): number of samples analysed for one or more substances of the respective group;

(c): number of non-compliant samples for one or more substances in the respective group;

(d): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

In group A, there were four non-compliant samples and seven non-compliant results reported in group A6 (chloramphenicol), by two countries.

For antibacterials (B1), six countries reported a total of seven non-compliant samples and results.

In the group B2, there were five non-compliant samples and results for anthelmintics (B2a) and 21 non-compliant samples and results for NSAIDs (B2e), reported by two and six countries, respectively.

In the group B3, there were four non-compliant samples and results for mycotoxins (B3d), relating to Aflatoxin M1, reported by three countries.

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

3.9. Eggs

The number of samples to be taken each year must be at least equal to one per 1,000 tonnes of annual egg production, with a minimum of 200 samples. Overall, the minimum requirements for the number of samples to be taken were fulfilled in 2020 (Table 27) and by the large majority of countries. Germany and Portugal did not analyse at least one sample/1,000 tonnes (t) of production, even though Germany was very close to it. Bulgaria, Cyprus, Greece, Hungary, Lithuania, Luxembourg, Malta, Norway and Portugal did not analyse the minimum 200 samples. The production volume and the number of samples analysed in each country are given in Table 28.

Table 27: Production of eggs and number of targeted samples over 2007–2020

Year	Production (t)	Targeted samples	Samples tested/ 1,000 t[a]	Minimum 96/23/EC
2007 (EU 27)	6,114,369	13,685	2.30	1/1,000 t
2008 (EU 27)	6,021,476	10,859	1.80	
2009 (EU 27)	6,137,732	13,031	2.20	
2010 (EU 27)	6,101,039	12,715	2.10	
2011 (EU 27)	6,136,691	12,248	2.00	
2012 (EU 27)	6,070,174	12,596	2.10	
2013 (EU 28)	6,070,334	13,323	2.20	
2014 (EU 28)	6,271,679	13,391	2.20	
2015 (EU 28)	6,255,410	13,158	2.10	
2016 (MS 27)[b]	5,424,380	12,700	2.40	
2016 (EU 28)	6,312,403			
2017 (EU 28)	6,416,551	9,944	1.60	
2018 (EU 28)	6,609,833	10,924	1.70	
2018 (EU 27, IS, NO)[c]	6,680,277			
2019 (EU 27, IS, NO)[c]	6,733,188	11,444	1.71	
2020 (EU 27, IS, NO)[d]	6,018,192	11,215	1.86	

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

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

(c): data from Malta were not available for inclusion in the 2019 results report; IS: Iceland; NO: Norway;

(d): data from United Kingdom were not included in the 2020 results report; IS: Iceland; NO: Norway

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

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/1,000 t
Austria	120,000	218	1.82
Belgium	153,200	551	3.60
Bulgaria	99,446	190	1.91
Croatia	33,125	216	6.52
Cyprus	9,915	144	14.52
Czechia	91,034	237	2.60
Denmark	68,454	206	3.01
Estonia	12,955	200	15.44

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/1,000 t
Finland	75,600	202	2.67
France	860,639	1,688	1.96
Germany	845,900	839	0.99
Greece	80,347	142	1.77
Hungary	51,269	137	2.67
Iceland	6,188	335	54.14
Ireland	49,448	307	6.21
Italy	770,000	1,099	1.43
Latvia	46,140	220	4.77
Lithuania	49,044	188	3.83
Luxembourg	2,000	115	57.50
Malta	5,165	132	25.56
Netherlands	629,828	763	1.21
Norway	69,792	182	2.61
Poland	565,982	851	1.50
Portugal[b]	142,790	59	0.41
Romania	137,585	508	3.69
Slovakia	45,389	219	4.82
Slovenia	28,909	223	7.71
Spain	845,258	843	1.00
Sweden	122,790	201	1.64
TOTAL	**6,018,192**	**11,215**	**1.86**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

The distribution of samples analysed, non-compliant samples and non-compliant results in eggs is presented in Table 29. Of the 11,251 egg samples analysed, 31 (0.28%) were non-compliant (43 non-compliant results). The non-compliant samples were reported by 10 countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	4,423	39.44	2	0.05	4
A1	0	0.00	0	-	0
A2	0	0.00	0	-	0
A3	0	0.00	0	-	0
A4	0	0.00	0	-	0
A5	65	0.58	0	-	0
A6	4,358	38.86	2	0.05	4
B	10,003	89.19	29	0.29	39
B1	5,225	46.59	9	0.17	10

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
B2	5,925	52.83	17	0.29	18
B2a	1,212	10.81	0	-	0
B2b	4,914	43.82	17	0.35	18
B2c	1,095	9.76	0	-	0
B2d	48	0.43	0	-	0
B2e	15	0.13	0	-	0
B2f	1,138	10.15	0	-	0
B3	2,683	23.92	3	0.11	11
B3a	1,793	15.99	3	0.17	11
B3b	1,177	10.49	0	-	0
B3c	131	1.17	0	-	0
B3d	4	0.04	0	-	0
B3e[f]					
B3f	1,221	10.89	0	-	0
Total	**11,215**	**100.00**	**31**	**0.28**	**43**

(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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

Directive 96/23/EC, Annex II requires the monitoring in group A, of the results of prohibited substances (A6) only. There were two non-compliant samples and four non-compliant results for A6 in 2020 by one country (hydroxymetronidazol, metronidazole).

For antibacterials (B1), nine non-compliant samples (10 non-compliant results) were reported by five countries.

In the group B2, 17 non-compliant samples (18 non-compliant results) were reported for anticoccidials (B2b), by six countries.

In the group B3, three non-compliant samples and 11 non-compliant results, were reported for organochlorine compounds, including PCBs (B3a), by one country.

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

3.10. Rabbit meat

The number of samples to be taken each year must be equal to 10 per 300 tonnes of annual production (dead weight) for the first 3,000 tonnes, plus one sample for each additional 300 tonnes. 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 2007–2020

Year	Production (t)	Targeted samples
2007 (EU 27)	189,932	4,480
2008 (EU 27)	187,389	3,625
2009 (EU 27)	199,655	3,691
2010 (EU 27)	172,353	3,885
2011 (EU 27)	176,315	3,737
2012 (EU 27)	173,626	3,471
2013 (EU 28)	164,664	2,796
2014 (EU 28)	156,204	2,762
2015 (EU 28)	162,216	2,509
2016 (MS 27)[(a)]	117,239	1,772
2016 (EU 28)	159,527	
2017 (EU 28)	148,112	1,717
2018 (EU 28)	143,917	1,654
2018 (EU 27, IS, NO)[(b)]	143,844	
2019 (EU 27, IS, NO)[(b)]	134,904	1,552
2020 (EU 27, IS, NO)	135,416	1,495

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

(b): the 2019 results data from Malta were not available for inclusion in this report; IS: Iceland; NO: Norway

To calculate the total number of samples that should be collected, two different equations were applied depending on the production volume[16].

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

Production volume and number of targeted samples for each country are presented in Table 31. France, Hungary, and Portugal did not achieve the minimum sampling frequency requirement in 2020.

[16] a) For countries with production above 3,000 t:

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

b) For countries with production below 3,000 t:

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

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

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/required
Austria	0		
Belgium	3,740	122	1.19
Bulgaria	6	12	60
Croatia	1	5	150
Cyprus	101	41	12.18
Czechia	836	46	1.65
Denmark	4	8	60
Estonia	1		
Finland	0		
France	34,079	171	0.84
Germany	336	37	3.3
Greece	1,076	56	1.56
Hungary	10,207	123	0.99
Iceland	0		
Ireland	0		
Italy	28,675	291	1.57
Latvia	6	8	40
Lithuania	97	10	3.09
Luxembourg	8	8	30
Malta	73	44	18.08
Netherlands	19	7	11.05
Norway	0		
Poland	6,164	113	1.02
Portugal[b]	5,895	8	0.07
Romania	1	9	270
Slovakia	9	62	206.67
Slovenia	3	19	190
Spain	44,076	295	1.25
Sweden	3		
TOTAL	**135,412**	**1,495**	

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

The distribution of samples analysed, non-compliant samples and non-compliant results in rabbit meat are presented in Table 32. Of the 1,495 samples analysed for rabbits, three (0.2%) were non-compliant (five non-compliant results). The non-compliant samples were reported by one country.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	577	38.60	0	-	0
A1	29	1.94	0	-	0
A2	17	1.14	0	-	0
A3	45	3.01	0	-	0
A4	35	2.34	0	-	0
A5	53	3.55	0	-	0
A6	439	29.36	0	-	0
B	1,151	76.99	3	0.26	5
B1	526	35.18	3	0.57	5
B2	545	36.45	0	-	0
B2a	134	8.96	0	-	0
B2b	240	16.05	0	-	0
B2c	83	5.55	0	-	0
B2d	3	0.20	0	-	0
B2e	69	4.62	0	-	0
B2f	90	6.02	0	-	0
B3	186	12.44	0	-	0
B3a	85	5.69	0	-	0
B3b	43	2.88	0	-	0
B3c	78	5.22	0	-	0
B3d	16	1.07	0	-	0
B3e[f]					
B3f	13	0.87	0	-	0
Total	**1,495**	**100.00**	**3**	**0.20**	**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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

In group A, there were no non-compliant samples and results.

In group B, there were three non-compliant samples and five non-compliant results reported for antibacterials (B1) (sulfadimethoxine, trimethoprim) by one country. There were no non-compliant samples reported for group B2 and B3.

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

3.11. Farmed game

European Commission Decision 97/747/EC requires that the number of samples to be taken each year 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 reporting countries on their production figures. For farmed game, a total of 1,283 targeted samples were collected in 2020 (Tables 33 and 34).

Table 33: Production of farmed game and number of targeted samples over 2007–2020

Year	Production (t)	Targeted samples
2007 (EU 27)	40,895	2,286
2008 (EU 27)	18,485	1,959
2009 (EU 27)	84,482	1,975
2010 (EU 27)	25,449	2,157
2011 (EU 27)	24,991	2,575
2012 (EU 27)	25,348	2,334
2013 (EU 28)	26,356	2,072
2014 (EU 28)	24,379	1,918
2015 (EU 28)	22,044	1,785
2016 (MS 27)[(a)]	12,976	1,607
2016 (EU 28)	46,623	
2017 (EU 28)	229,431	1,635
2018 (EU 28)	12,293	1,594
2018 (EU 27, IS, NO)[(b)]	14,370	
2019 (EU 27, IS, NO)[(b)]	17,984	1,175
2020 (EU 27, IS, NO)	15,521	1,283

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

(b): the 2019 results data from Malta were not available for inclusion in this report; IS: Iceland; NO: Norway

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

Country	Production data (tons)[(a)]	Number of samples 2020
Austria	5,170	118
Belgium	48	236
Bulgaria	11	19
Croatia	10	27
Cyprus	0	
Czechia	195	101
Denmark	22	16
Estonia	0	
Finland	1,405	85
France	197	72
Germany	1,962	109
Greece	47	7

Country	Production data (tons)[a]	Number of samples 2020
Hungary	604	71
Iceland	0	
Ireland	21	11
Italy	2,263	10
Latvia	27	17
Lithuania	6	18
Luxembourg	0	
Malta	0	
Netherlands	132	3
Norway	2,077	110
Poland	17	26
Portugal[b]	0	
Romania	49	75
Slovakia	0	84
Slovenia	6	9
Spain	0	
Sweden	1,252	59
TOTAL	**15,521**	**1,283**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

The distribution of samples analysed, non-compliant samples and non-compliant results in farmed game are presented in Table 35. Of the 1,283 samples analysed for farmed game, 24 (1.87%) were non-compliant (31 non-compliant results). The non-compliant samples were reported by four countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	368	28.68	0	-	0
A1	38	2.96	0	-	0
A2	13	1.01	0	-	0
A3	36	2.81	0	-	0
A4	41	3.20	0	-	0
A5	60	4.68	0	-	0
A6	219	17.07	0	-	0
B	1,096	85.42	24	2.19	31
B1	212	16.52	0	-	0
B2	475	37.02	0	-	0
B2a	206	16.06	0	-	0
B2b	121	9.43	0	-	0

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
B2c	71	5.53	0	-	0
B2d	30	2.34	0	-	0
B2e	48	3.74	0	-	0
B2f	54	4.21	0	-	0
B3	498	38.82	24	4.82	31
B3a	145	11.30	0	-	0
B3b	54	4.21	0	-	0
B3c	350	27.28	24	6.86	31
B3d	19	1.48	0	-	0
B3e[f]					
B3f	35	2.73	0	-	0
Total	**1,283**	**100.00**	**24**	**1.87**	**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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

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

In the group B3, 24 non-compliant samples and 31 non-compliant results were reported for chemical elements (B3c) (cadmium, copper and lead), by four countries.

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

3.12. Wild game

European Commission Decision 97/747/EC requires that the number of samples to be taken each year to be at least 100 samples. Samples must be taken to analyse results of chemical elements. For wild game, a total of 2,257 targeted samples were collected in 2020 (Tables 36 and 37).

Table 36: Production of wild game and number of targeted samples over 2007–2020

Year	Production (t)	Targeted samples
2007 (EU 27)	270,704	2,360
2008 (EU 27)	316,541	2,443
2009 (EU 27)	252,328	2,488
2010 (EU 27)	147,097	2,395
2011 (EU 27)	263,860	2,674
2012 (EU 27)	209,607	2,600
2013 (EU 28)	204,013	2,694
2014 (EU 28)	180,307	2,601
2015 (EU 28)	201,794	2,480
2016 (MS 27)[(a)]	172,090	2,468
2016 (EU 28)	3,394,896	
2017 (EU 28)	469,359	1,760
2018 (EU 28)	390,891	1,781
2018 (EU 27, IS, NO)[(b)]	397,393	
2019 (EU 27, IS, NO)[(b)]	6,407,975	2,443
2020 (EU 27, IS, NO)	6,407,528	2,257

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

(b): the 2019 results data from Malta were not available for inclusion in this report; IS: Iceland; NO: Norway

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

Country	Production data (tons)[(a)]	Number of samples 2020
Austria	395,480	191
Belgium	3,491	182
Bulgaria	81	76
Croatia	10	8
Cyprus	0	
Czechia	20,181	135
Denmark	483	11
Estonia	636	99
Finland	65	
France	115,000	52
Germany	91,502	91
Greece	2	12
Hungary	11,338	52

Country	Production data (tons)[a]	Number of samples 2020
Iceland	0	10
Ireland	466	95
Italy	6,145	122
Latvia	194	101
Lithuania	155	2
Luxembourg	450	100
Malta	0	
Netherlands	690	32
Norway	6,502	164
Poland	34,794	235
Portugal[b]	133	2
Romania	169	78
Slovakia	8,813	116
Slovenia	2,890	102
Spain	5,706,113	118
Sweden	1,745	71
TOTAL	**6,407,463**	**2,257**

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

The distribution of samples analysed, non-compliant samples and non-compliant results in wild game are presented in Table 38. Of the 2,257 samples analysed for wild game, 152 (6.73%) were non-compliant (181 non-compliant results). The non-compliant samples were reported by 12 countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	52	2.30	0	-	0
A1	1	0.04	0	-	0
A2	6	0.27	0	-	0
A3	2	0.09	0	-	0
A4	1	0.04	0	-	0
A5	3	0.13	0	-	0
A6	43	1.91	0	-	0
B	2,221	98.40	152	6.84	181
B1	12	0.53	0	-	0
B2	143	6.34	0	-	0
B2a	90	3.99	0	-	0
B2b	15	0.66	0	-	0
B2c	43	1.91	0	-	0

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
B2d	0	0.00	0	-	0
B2e	6	0.27	0	-	0
B2f	1	0.04	0	-	0
B3	2,112	93.58	152	7.20	181
B3a	179	7.93	10	5.59	14
B3b	40	1.77	0	-	0
B3c	2,007	88.92	142	7.08	167
B3d	0	0.00	0	-	0
B3e[f]					
B3f	30	1.33	0	-	0
Total	**2,257**	**100.00**	**152**	**6.73**	**181**

(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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

The vast majority of the non-compliant samples (n = 142) (and results n = 167) were reported for metals (B3c) (71 results for cadmium; 57 results for copper; 34 results for lead; five results for total mercury) reported by 11 countries. The only other non-compliant samples, were for organochlorine compounds (B3a) (n = 10) (and results n = 14), reported by three countries.

3.13. Honey

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

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

In 2020, targeted samples were collected for honey (Table 39). Production volume and number of targeted samples broken down by country are presented in Table 40. Bulgaria, Finland, France, Germany, Hungary, Latvia, Norway, Portugal, Spain and Sweden did not achieve the minimum sampling frequency requirement in 2020, even though five of them were very close to the target requirement of 10/300 t.

Table 39: Production of honey and number of targeted samples over 2007–2020

Year	Production (t)	Targeted samples
2007 (EU 27)	188,945	5,850
2008 (EU 27)	158,694	5,257

Year	Production (t)	Targeted samples
2009 (EU 27)	162,213	4,826
2010 (EU 27)	191,501	4,720
2011 (EU 27)	215,141	4,684
2012 (EU 27)	215,101	4,820
2013 (EU 28)	205,466	4,612
2014 (EU 28)	200,808	4,294
2015 (EU 28)	193,347	4,203
2016 (MS 27)[a]	222,048	3,545
2016 (EU 28)	236,720	
2017 (EU 28)	216,244	3,619
2018 (EU 28)	229,009	3,645
2018 (EU 27, IS, NO)[b]	230,194	
2019 (EU 27, IS, NO)[b]	273,240	3,926
2020 (EU 27, IS, NO)	266,211	3,301

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

(b): the 2019 results data from Malta were not available for inclusion in this report; IS: Iceland; NO: Norway

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

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/required
Austria	4,600	189	1.79
Belgium	2,500		
Bulgaria	8,733	110	0.92
Croatia	3,400	113	1.12
Cyprus	660	55	2.5
Czechia	7,020	113	1
Denmark	2,500	91	1.09
Estonia	1,253	42	1.01
Finland	1,700	56	0.99
France	28,802	120	0.65
Germany	28,911	184	0.99
Greece	21,939	190	1.16
Hungary	28,965	148	0.79
Iceland	0		
Ireland	250	84	10.08
Italy	23,000	297	1.78
Latvia	1,998	52	0.78
Lithuania	4,207	105	1.01
Luxembourg	150	26	5.2
Malta	15	12	24
Netherlands	1,730	65	1.13

Country	Production data (tons)[a]	Number of samples 2020	Samples tested/required
Norway	1,200	33	0.82
Poland	23,982	471	2.77
Portugal[b]	10,757	16	0.13
Romania	11,755	175	1.35
Slovakia	4,829	188	1.77
Slovenia	1,746	70	1.2
Spain	36,391	199	0.94
Sweden	3,218	97	0.96
TOTAL	**263,711**	**3,301**	

(a): The production data, taken from the 2020 Residue Control Plan, may pertain to the years 2018, 2019 or 2020.

(b): Portugal collected more samples and performed more analyses in 2020 than those reported, however due to various constraints, not all data have been reported to EFSA.

The distribution of samples analysed, non-compliant samples and non-compliant results in honey are presented in Table 41. Of the 3,301 samples analysed for honey, 47 (1.42%) were non-compliant (53 non-compliant results). The non-compliant samples were reported by 10 countries.

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

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
A	989	29.96	0	-	0
A1	0	0.00	0	-	0
A2	0	0.00	0	-	0
A3	0	0.00	0	-	0
A4	0	0.00	0	-	0
A5	181	5.48	0	-	0
A6	808	24.48	0	-	0
B	2,980	90.28	47	1.58	53
B1	1,424	43.14	8	0.56	13
B2	1,067	32.32	1	0.09	1
B2a	264	8.00	0	-	0
B2b	120	3.64	0	-	0
B2c	818	24.78	0	-	0
B2d	0	0.00	0	-	0
B2e	0	0.00	0	-	0
B2f	709	21.48	1	0.14	1
B3	1,499	45.41	38	2.54	39
B3a	803	24.33	0	-	0
B3b	792	23.99	0	-	0
B3c	459	13.90	37	8.06	38
B3d	5	0.15	0	-	0

Substance Group[a]	Samples analysed[b]	% Samples analysed	Non-compliant samples[c]	% Non-compliant samples[d]	Non-compliant results[e]
B3e[f]					
B3f	684	20.72	1	0.15	1
Total	**3,301**	**100.00**	**47**	**1.42**	**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): '-' indicates that all samples were compliant;

(e): 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;

(f): B3e subgroup not analysed since not applicable.

For antibacterials (B1), eight non-compliant samples (13 non-compliant results) were reported. One non-compliant sample and residue was reported for 'other pharmacologically active substances' (B2f), 37 non-compliant samples and 38 non-compliant results were reported for chemical elements (B3c) (five for lead and 33 for copper) and one non-compliant sample and residue was reported for 'others' (B3f).

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

3.14. Suspect, import and other samples

In addition to the targeted samples collected in conformity with the specification of the NRCP for 2020, results were reported on samples collected through sampling strategies other than targeted.

According to Directive 96/23/EC in case of infringements of MRLs 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 reporting countries 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 2020, 4,259 suspect samples were reported of which 200 (0.05%) were non-compliant. It is to note that the number of non-compliant findings reported from suspect sampling, does not accurately reflect the residue situation of a country. 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 countries. 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 country which reported non-compliant results are given in Appendix B.

Apart from the data submitted in accordance to NRCPs, a certain amount of results on samples checked at import are reported (n = 2,551). As the control of samples at import is more linked to the third country monitoring than to residue monitoring in the EU, those results are reported 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 countries which reported non-compliant results are given in Appendix C.

In total, 282,159 samples were collected in the framework of other monitoring programmes developed under the national legislation. An overview on the number of 'other' samples analysed for the different animal species/product categories and the frequency of non-compliant samples is summarised in Table 42. Further details on the substances identified and countries 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

Product Group	Suspect samples total	Suspect samples non-compliant	Import samples total	Import samples non-compliant	Other samples total	Other samples non-compliant
Aquaculture	257	17	1,305	14	139	0
Bovines	3,086	28	329	0	19,820	33
Eggs	32	7	28	0	339	1
Game (Farmed	1	0	15	0	10	0
Game (Wild	2	1	10	0	28	5
Honey	32	4	272	0	184	1
Horses	48	0	31	0	116	0
Milk	147	6	14	0	1,300	0
Pigs	319	19	99	1	255,046	31
Poultry	52	0	395	0	420	0
Rabbits	6	0	4	0	86	1
Sheep/goats	277	118	49	1	4,671	1
Total	**4,259**	**200**	**2,551**	**16**	**282,159**	**73**
Percentage		**4.69**		**0.63**		**0.03**

4. Conclusions

- In 2020, 27 out of 27 European Union (EU) Member States, Iceland and Norway reported in the framework of the residue monitoring the results for 620,758 samples, corresponding to nearly 13 million single analytical results. A total of 331,789 targeted samples and 4,259 suspect samples were reported under Council Directive 96/23/EC. Additionally, 282,159 samples collected in the framework of other programmes developed under the national legislation and 2,551 samples checked at import, were reported. Compared to the previously monitoring year (2019) both the total and targeted number of samples tested was lower in 2020; this decrease can be partially ascribed to the fact that one country data (United Kingdom) were not reported to EFSA and due to the constrains certain Member States had to face due to the Covid19 pandemic situation in Europe.

- Most countries fulfilled the requirements for sampling frequency laid down in Council Directive 96/23/EC and in Commission Decision 97/747/EC. For some countries that did not achieve the minimum requirements on sampling frequency it is noted that the deviation from the target minimum number of samples was in the majority of the instances very small.

- Overall, in 2020 there were 888 or 0.27% of non-compliant samples out of the 331,789 targeted samples tested in 2020. The number of non-compliant results amounted to 1,076; thus, some of the non-conform samples contained multiple non-compliant results.

- Among all the targeted samples tested in 2020 for any residue groups, in 2020 all the samples tested for residue of stilbenes and derivatives (A1), pyrethroids (B2c), and sedatives (B2d) were found compliant.

- For antithyroid agents (A2), there were 0.34% non-compliant targeted samples (35 results), all due to thiouracil residues in bovine (29 results), pigs (two results) and sheep and goats (four results); some of those non-conformities were possibly due to feeding diets rich in brassica and cruciferous plants. Also, in 2019 all the A2 non-conform results were also reported for the same residue, but the non-compliance rate observed was higher than in 2020 (0.58%); thiouracil is a historical anti-thyroid product, whose use may have been replaced by more recent medicinal products.

- In the group of steroids (A3), non-compliant targeted samples (27% on non-complaint samples, 68 non-compliant results) were found in four product groups: bovines (0.11%), pigs (0.10%), horses (0.62%) and sheep and goats (4.23%). Some of the non-compliant results can be attributed to endogenous animal production.

- In the group of resorcylic acid lactones (A4), 0.04% of the samples (seven samples, 22 results) were non-compliant for zearalanone and derivatives; the non-compliant samples were found in three products groups: bovines (0.01%), pigs (0.07%), and horses (1.55%).

- For beta-agonists (A5), there was only one non-compliant result reported for salbutamol found in one bovine targeted sample.

- Prohibited substances (A6) were found in 0.02% (15 samples) of the tested targeted samples. Substances identified were chloramphenicol (n = 11), metronidazole (n = 4), hydroxymetronidazol (MNZOH) (n = 3), semicarbazide (n = 3) and nitrofurazone (n = 1). Non-conformities were reported for 22 results: eggs (four results), milk (seven results), pigs (seven results), poultry (two results) and sheep and goats (two results).

- For antibacterials (B1), 0.14% of the targeted samples analysed under the Directive 96/23/EC monitoring were non-compliant (127 samples, 171 results). The animal group most frequently

tested for antibacterial residues was pigs, but the highest frequency of non-compliant samples for antibacterial residues was found in rabbits (0.57%).

- In Group B2 ('other' veterinary drugs), the highest proportion of non-compliant samples was found for non-steroidal anti-inflammatory drugs (NSAIDs) (B2e) (0.23%). For NSAIDs, the non-compliant samples were reported across the different species: bovines (0.43%), poultry (0.04%), horses (1.17%), pigs (0.01%) and milk (0.41%).
- Instances of non-compliance for anthelmintics (B2a) were reported in bovines (0.06%), sheep and goats (0.23%), pigs (0.02%), poultry (0.02%) and milk (0.09%).
- For anticoccidials (B2b), 0.07% of the samples analysed were non-compliant and were reported across the different species as follows: pigs (0.01%), poultry (0.06%) and eggs (0.35%).
- Since 2009 and up to the control activities in 2019, an important decrease has been observed in the frequency of non-compliant samples for anticoccidials (B2b) in poultry. This decrease is most likely the result of the awareness and the measures that followed the implementation of the Commission Directive 2009/8/EC setting up maximum levels of unavoidable carry-over of coccidiostats in non-target feed. In 2020 the sample non-compliance rate was 0.07%, i.e. a slight increase of the percentage was observed compared to 2019 (0.05%).
- Non-compliant samples were reported for 'other pharmacologically active substances' (B2f), in bovines (0.14%), poultry (0.07%) and honey (0.14%). Non-compliances were reported for amitraz, dexamethasone, prednisolone and nicotine. Amitraz and nicotine residues may also arise from the use of this substance as pesticide, while prednisolone could be produced endogenously by animals.
- In the Group B3 (other substances and environmental contaminants), the 'chemical elements' (B3c) had the highest overall percentage of non-compliant samples (3.71%), with copper, cadmium, total mercury and lead being most frequently identified. This latter finding is in line with previous years' results.
- Instances of non-compliance for organochlorine compounds (B3a) and organophosphorus compounds (B3b) were 0.1% and 0.01%, respectively. The occurrence of organochlorine compounds in products of animal origin arises mainly from these persistent residues in the environment (e.g. in soil) that are e.g. taken-up by vegetables crops fed to animals. Organophosphorus compounds are also used as plant protection products and their residues in animals/products of animal origin may arise from plant-based feed.
- For mycotoxins (B3d), non-compliant samples were reported for pigs (0.21%), horses (2.27%) and milk (0.26%), with those identified being zearalenone, aflatoxin M1 and ochratoxin A. Some of these residues are partly due to naturally occurrence from fungi belonging to the genus *Fusarium* and hence found as contaminants in feed.
- For dyes (B3e), non-compliant samples were reported for aquaculture (0.62%). The substances found were 'Sum of crystal violet and leucocrystal violet' and 'Sum of malachite green and leuco-malachite green'. The use of these dyes is forbidden in the EU for use in food production, but their residues potentially can originate from background concentration in fish feed.
- For 'other substances' (B3f), non-compliant samples were reported for honey (0.15%) and pigs (0.11%). The substances identified were acetamiprid and fipronil, two substances that are used also as plant protection products (pesticides).
- Overall, the percentage of non-compliant samples in 2020 (0.19%) was lower compared to the previous 11 years (0.25%-0.37%); the same is true for what it concerns the targeted samples, for

which the sample non-compliance rate was 0.27% in 2020 while it decreased from 0.35% in 2017 to 0.32% in 2109.

- Compared to the results from 2017, 2018 and 2019, in 2020 the frequency of non-compliant results was decreased for antithyroid agents (A2), steroids (A3) and resorcylic acid lactones (A4). For prohibited substances (A6), compared to 2019 the frequency on non-compliance in 2020 was higher, although lower compared to 2017 and 2018.
- For chemical elements (including metals) (B3c), compared to 2017 and 2019, the frequency on non-compliance in 2020 was lower, although higher compared to 2018.
- Decreases in the frequency of non-compliant samples were noted for anthelmintics (B2a), organochlorine compounds (B3a), organophosphorus compounds (B3b), dyes (B3e) and 'other substances' (B3f), compared to 2017, 2018 and 2019 results. For anticoccidials (B2b), non-steroidal anti-inflammatory drugs (NSAIDs) (B2e), 'other pharmacologically active substances' (B2f) and mycotoxins (B3d), compared to 2019 the frequency on non-compliance was higher while lower for other substances and environmental contaminants (B3). For antibacterials (B1), other veterinary drugs (B2), pyrethroids (B2c) and sedatives (B2d) there were no notable variations compared to 2019.

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6. Abbreviations

AMOZ	5-methylmorpholino-3-amino-2-oxazolidone
AOZ	3-amino-2-oxazolidone
DCF	Data Collection Framework for data transmission
DG SANTE	Directorate General for Health and Food Safety
EC	European Commission
EFSA	European Food Safety Authority
IS	Iceland
MRL	Maximum Residue Limits
ML	Maximum Limits
MRPL	Minimum Required Performance Limit
NO	Norway
MNZOH	Hydroxymetronidazol
NRCPs	National Residue Control Plans
NSAIDs	Non-steroidal anti-inflammatory drugs
RASFF	Rapid Alert System for Food and Feed
SEM	Semicarbazide
SSD2	Standard Sample Description Version 2
TRACES	Trade Control and Expert System

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

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Aquaculture	Group B1	Sulfadiazine	France	113	1	0.88
Aquaculture	Group B1	Sum of oxytetracycline and its 4-epimer	France	113	2	1.77
Aquaculture	Group B1	Trimethoprim	France	113	1	0.88
Aquaculture	Group B1	Trimethoprim	Italy	21	1	4.76
Aquaculture	**Group B1**	**Sub-total for Group B1**	**2**		**5**	
Aquaculture	Group B3a	Sum of 6 PCB indicators	Portugal	15	1	6.67
Aquaculture	**Group B3a**	**Sub-total for Group B3a**	**1**		**1**	
Aquaculture	Group B3c	Lead (Pb)	France	30	1	3.33
Aquaculture	Group B3c	Total mercury	Spain	52	1	1.92
Aquaculture	**Group B3c**	**Sub-total for Group B3c**	**2**		**2**	
Aquaculture	Group B3e	Sum of cristal violet and leucocristal violet	Italy	217	2	0.92
Aquaculture	Group B3e	Sum of cristal violet and leucocristal violet	Poland	230	1	0.43
Aquaculture	Group B3e	Sum of cristal violet and leucocristal violet	Slovakia	84	1	1.19
Aquaculture	Group B3e	Sum of malachite green and leucomalachite green	Austria	110	1	0.91
Aquaculture	Group B3e	Sum of malachite green and leucomalachite green	Czechia	85	1	1.18
Aquaculture	Group B3e	Sum of malachite green and leucomalachite green	Germany	288	2	0.69
Aquaculture	Group B3e	Sum of malachite green and leucomalachite green	Italy	227	1	0.44
Aquaculture	Group B3e	Sum of malachite green and leucomalachite green	Poland	230	2	0.87
Aquaculture	**Group B3e**	**Sub-total for Group B3e**	**6**		**11**	
Aquaculture		**Total for Aquaculture**			**19**	

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Bovines	Group A2	Thiouracil	Austria	95	1	1.05
Bovines	Group A2	Thiouracil	Greece	54	3	5.56
Bovines	Group A2	Thiouracil	Iceland	10	5	50.00
Bovines	Group A2	Thiouracil	Ireland	266	2	0.75
Bovines	Group A2	Thiouracil	Netherlands	214	16	7.48
Bovines	Group A2	Thiouracil	Spain	554	2	0.36
Bovines	**Group A2**	**Sub-total for Group A2**	**6**		**29**	
Bovines	Group A3	17α-Boldenone Glucuronide	Netherlands	4	1	25.00
Bovines	Group A3	Boldenone-Alpha	Ireland	5	1	20.00
Bovines	Group A3	Boldenone-Alpha	Norway	120	1	0.83
Bovines	Group A3	Boldenone-Alpha	Poland	233	1	0.43
Bovines	Group A3	Epinandrolone (19-Norepitestosterone)	Czechia	61	1	1.64
Bovines	Group A3	Epinandrolone (19-Norepitestosterone)	Norway	120	3	2.50
Bovines	Group A3	Norethandrolon	Lithuania	92	2	2.17
Bovines	Group A3	Progesterone	Lithuania	15	2	13.33
Bovines	Group A3	Progesterone-17-Alpha-Hydroxy	Lithuania	4	1	25.00
Bovines	Group A3	Testosterone-17-Beta	Austria	168	1	0.60
Bovines	Group A3	Testosterone-17-Beta	Italy	87	1	1.15
Bovines	Group A3	Testosterone-17-Beta	Latvia	10	5	50.00
Bovines	Group A3	Testosterone-17-Beta	Lithuania	61	5	8.20
Bovines	Group A3	Testosterone-17-Beta	Poland	220	3	1.36
Bovines	**Group A3**	**Sub-total for Group A3**	**9**		**28**	
Bovines	Group A4	Alpha-Zearalanol (Zeranol)	Iceland	10	1	10.00
Bovines	Group A4	Beta Zearalanol (Taleranol)	Iceland	10	1	10.00
Bovines	**Group A4**	**Sub-total for Group A4**	**1**		**2**	
Bovines	Group A5	Salbutamol (albuterol)	Germany	1,187	1	0.08
Bovines	**Group A5**	**Sub-total for Group A5**	**1**		**1**	

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Bovines	Group B1	Amoxycillin	Czechia	311	1	0.32
Bovines	Group B1	Amoxycillin	Italy	1,126	1	0.09
Bovines	Group B1	Amoxycillin	Spain	1,290	1	0.08
Bovines	Group B1	Benzylpenicillin (Penicillin G)	Netherlands	1,743	1	0.06
Bovines	Group B1	Dihydrostreptomycin	Germany	630	1	0.16
Bovines	Group B1	Dihydrostreptomycin	Latvia	51	1	1.96
Bovines	Group B1	Gentamicin	Netherlands	1,743	2	0.11
Bovines	Group B1	Kanamycin	Poland	858	1	0.12
Bovines	Group B1	Marbofloxacin	Italy	496	1	0.20
Bovines	Group B1	Marbofloxacin	Spain	880	1	0.11
Bovines	Group B1	Neomycin	Poland	858	1	0.12
Bovines	Group B1	Sulfadiazine	Italy	1,533	1	0.07
Bovines	Group B1	Sulfadoxin	Spain	661	1	0.15
Bovines	Group B1	Sulfonamides	Italy	811	1	0.12
Bovines	Group B1	Sum of chlortetracyclin and its 4-epimer	Ireland	2	1	50.00
Bovines	Group B1	Sum of enrofloxacin and ciprofloxacin	Croatia	129	1	0.78
Bovines	Group B1	Sum of enrofloxacin and ciprofloxacin	Poland	1,443	2	0.14
Bovines	Group B1	Sum of florfenicol and its metabolites measured as florfenicol-amine	France	1,549	2	0.13
Bovines	Group B1	Sum of florfenicol and its metabolites measured as florfenicol-amine	Italy	68	1	1.47
Bovines	Group B1	Sum of oxytetracycline and its 4-epimer	France	2,010	15	0.75
Bovines	Group B1	Sum of oxytetracycline and its 4-epimer	Italy	1,159	1	0.09
Bovines	Group B1	Sum of oxytetracycline and its 4-epimer	Lithuania	106	2	1.89
Bovines	Group B1	Sum of oxytetracycline and its 4-epimer	Netherlands	1,743	1	0.06
Bovines	Group B1	Sum of oxytetracycline and its 4-epimer	Poland	1,443	3	0.21

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Bovines	Group B1	Sum of tetracycline and its 4-epimer	Ireland	2	1	50.00
Bovines	Group B1	Tilmicosin	Belgium	723	1	0.14
Bovines	Group B1	Tilmicosin	France	1,548	1	0.06
Bovines	Group B1	Tilmicosin	Poland	857	1	0.12
Bovines	Group B1	Tulathromycin	France	1,549	5	0.32
Bovines	**Group B1**	**Sub-total for Group B1**	**12**		**53**	
Bovines	Group B2a	Avermectin B1a	Germany	185	1	0.54
Bovines	Group B2a	Avermectin B1a-22-23-Dihydro	Germany	124	1	0.81
Bovines	Group B2a	Closantel	Ireland	530	2	0.38
Bovines	Group B2a	Levamisole	Italy	63	1	1.59
Bovines	**Group B2a**	**Sub-total for Group B2a**	**3**		**5**	
Bovines	Group B2e	Acetaminophen (Paracetamol)	Germany	12	2	16.67
Bovines	Group B2e	Antipyrin-4-Amino	Germany	106	1	0.94
Bovines	Group B2e	Antipyrin-4-Formylamino	Germany	56	1	1.79
Bovines	Group B2e	Antipyrin-4-Methylamino	Germany	280	2	0.71
Bovines	Group B2e	Diclofen (Diclofenac)	Estonia	3	1	33.33
Bovines	Group B2e	Flunixin	France	789	1	0.13
Bovines	Group B2e	Flunixin	Germany	1,413	1	0.07
Bovines	Group B2e	Ketoprofen	Germany	950	7	0.74
Bovines	Group B2e	Ketoprofen	Norway	50	1	2.00
Bovines	Group B2e	Meloxicam	France	787	2	0.25
Bovines	Group B2e	Meloxicam	Germany	1,459	8	0.55
Bovines	Group B2e	Meloxicam	Netherlands	209	1	0.48
Bovines	Group B2e	Meloxicam	Poland	48	1	2.08
Bovines	**Group B2e**	**Sub-total for Group B2e**	**6**		**29**	
Bovines	Group B2f	Dexamethasone	France	545	1	0.18
Bovines	Group B2f	Dexamethasone	Germany	1,183	6	0.51
Bovines	Group B2f	Dexamethasone	Ireland	70	1	1.43
Bovines	Group B2f	Dexamethasone	Italy	2,580	5	0.19
Bovines	Group B2f	Dexamethasone	Poland	130	1	0.77
Bovines	Group B2f	Prednisolone	Spain	628	2	0.32

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Bovines	**Group B2f**	**Sub-total for Group B2f**	**6**		**16**	
Bovines	Group B3a	Sum of 6 PCB indicators	Germany	220	1	0.45
Bovines	Group B3a	TEQ Dioxins and dioxin-like PCBs MB	Germany	3	1	33.33
Bovines	Group B3a	TEQ dioxins and dioxin-like PCBs LB	Germany	2	1	50.00
Bovines	Group B3a	WHO-PCDD/F-PCB-TEQ	Germany	3	1	33.33
Bovines	**Group B3a**	**Sub-total for Group B3a**	**1**		**4**	
Bovines	Group B3c	Cadmium (Cd)	Czechia	128	4	3.12
Bovines	Group B3c	Cadmium (Cd)	France	635	5	0.79
Bovines	Group B3c	Cadmium (Cd)	Germany	295	6	2.03
Bovines	Group B3c	Cadmium (Cd)	Latvia	8	1	12.50
Bovines	Group B3c	Cadmium (Cd)	Netherlands	189	19	10.05
Bovines	Group B3c	Cadmium (Cd)	Poland	178	2	1.12
Bovines	Group B3c	Cadmium (Cd)	Spain	202	11	5.45
Bovines	Group B3c	Copper (Cu)	Austria	142	2	1.41
Bovines	Group B3c	Copper (Cu)	Germany	295	71	24.07
Bovines	Group B3c	Copper (Cu)	Norway	61	26	42.62
Bovines	Group B3c	Copper (Cu)	Slovenia	8	1	12.50
Bovines	Group B3c	Total mercury	Czechia	133	1	0.75
Bovines	Group B3c	Total mercury	Germany	295	5	1.69
Bovines	Group B3c	Total mercury	Netherlands	189	1	0.53
Bovines	**Group B3c**	**Sub-total for Group B3c**	**10**		**155**	
Bovines		**Total for Bovines**			**322**	
Eggs	Group A6	Hydroxymetronidazol (MNZOH)	France	134	2	1.49
Eggs	Group A6	Metronidazole	France	134	2	1.49
Eggs	**Group A6**	**Sub-total for Group A6**	**1**		**4**	
Eggs	Group B1	Doxycycline	Latvia	154	1	0.65
Eggs	Group B1	Doxycycline	Poland	305	1	0.33
Eggs	Group B1	Doxycycline	Spain	287	1	0.35
Eggs	Group B1	Sulfadiazine	Spain	339	3	0.88
Eggs	Group B1	Sulfadimethoxine	Italy	126	1	0.79

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Eggs	Group B1	Sulfamethoxazole	Czechia	41	1	2.44
Eggs	Group B1	Sum of enrofloxacin and ciprofloxacin	Poland	306	1	0.33
Eggs	Group B1	Trimethoprim	Spain	268	1	0.37
Eggs	**Group B1**	**Sub-total for Group B1**	**5**		**10**	
Eggs	Group B2b	Diclazuril	Croatia	158	2	1.27
Eggs	Group B2b	Diclazuril	Slovenia	182	1	0.55
Eggs	Group B2b	Lasalocid	France	517	2	0.39
Eggs	Group B2b	Lasalocid	Poland	244	1	0.41
Eggs	Group B2b	Monensin	Poland	245	3	1.22
Eggs	Group B2b	Narasin	France	517	1	0.19
Eggs	Group B2b	Narasin	Poland	245	2	0.82
Eggs	Group B2b	Robenidine	Greece	24	1	4.17
Eggs	Group B2b	Salinomycin	France	517	1	0.19
Eggs	Group B2b	Salinomycin	Poland	245	2	0.82
Eggs	Group B2b	Toltrazurilsulfon	Latvia	149	2	1.34
Eggs	**Group B2b**	**Sub-total for Group B2b**	**6**		**18**	
Eggs	Group B3a	TEQ Dioxins and dioxin-like PCBs MB	Germany	107	2	1.87
Eggs	Group B3a	TEQ dioxins (PCDD and PCDF) LB	Germany	87	3	3.45
Eggs	Group B3a	TEQ dioxins and dioxin-like PCBs LB	Germany	87	2	2.30
Eggs	Group B3a	WHO-PCDD/F-PCB-TEQ	Germany	133	2	1.50
Eggs	Group B3a	WHO-PCDD/F-TEQ	Germany	133	2	1.50
Eggs	**Group B3a**	**Sub-total for Group B3a**	**1**		**11**	
Eggs		**Total for Eggs**			**43**	
Game (Farmed Game)	Group B3c	Cadmium (Cd)	Finland	23	9	39.13
Game (Farmed Game)	Group B3c	Cadmium (Cd)	Norway	27	6	22.22
Game (Farmed Game)	Group B3c	Copper (Cu)	Germany	29	1	3.45
Game (Farmed Game)	Group B3c	Copper (Cu)	Norway	27	13	48.15
Game (Farmed Game)	Group B3c	Lead (Pb)	Austria	19	1	5.26

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Game (Farmed Game)	Group B3c	Lead (Pb)	Norway	27	1	3.70
Game (Farmed Game)	**Group B3c**	**Sub-total for Group B3c**	**4**		**31**	
Game (Farmed Game)		**Total for Game (Farmed Game)**			**31**	
Game (Wild Game)	Group B3a	DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT)	Czechia	17	1	5.88
Game (Wild Game)	Group B3a	DDT (sum of p,p'-DDT, o,p'-DDT, p-p'-DDE and p,p'-TDE (DDD) expressed as DDT)	Germany	80	7	8.75
Game (Wild Game)	Group B3a	Hexachlorobenzene	Belgium	6	1	16.67
Game (Wild Game)	Group B3a	Hexachlorobenzene	Germany	80	2	2.50
Game (Wild Game)	Group B3a	Hexachlorocyclohexane (HCH), alpha-isomer	Germany	80	1	1.25
Game (Wild Game)	Group B3a	Hexachlorocyclohexane (HCH), beta-isomer	Belgium	6	1	16.67
Game (Wild Game)	Group B3a	Hexachlorocyclohexane (HCH), beta-isomer	Germany	80	1	1.25
Game (Wild Game)	**Group B3a**	**Sub-total for Group B3a**	**3**		**14**	
Game (Wild Game)	Group B3c	Cadmium (Cd)	France	38	1	2.63
Game (Wild Game)	Group B3c	Cadmium (Cd)	Latvia	101	34	33.66
Game (Wild Game)	Group B3c	Cadmium (Cd)	Norway	164	28	17.07
Game (Wild Game)	Group B3c	Cadmium (Cd)	Poland	175	5	2.86
Game (Wild Game)	Group B3c	Cadmium (Cd)	Spain	118	3	2.54
Game (Wild Game)	Group B3c	Copper (Cu)	Norway	164	57	34.76
Game (Wild Game)	Group B3c	Lead (Pb)	Austria	172	5	2.91
Game (Wild Game)	Group B3c	Lead (Pb)	Czechia	99	5	5.05
Game (Wild Game)	Group B3c	Lead (Pb)	France	38	7	18.42
Game (Wild Game)	Group B3c	Lead (Pb)	Latvia	101	5	4.95
Game (Wild Game)	Group B3c	Lead (Pb)	Norway	164	2	1.22
Game (Wild Game)	Group B3c	Lead (Pb)	Poland	175	3	1.71
Game (Wild Game)	Group B3c	Lead (Pb)	Slovenia	102	3	2.94
Game (Wild Game)	Group B3c	Lead (Pb)	Spain	114	3	2.63
Game (Wild Game)	Group B3c	Lead (Pb)	Sweden	70	1	1.43

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Game (Wild Game)	Group B3c	Total mercury	Germany	83	4	4.82
Game (Wild Game)	Group B3c	Total mercury	Slovakia	101	1	0.99
Game (Wild Game)	**Group B3c**	**Sub-total for Group B3c**	**11**		**167**	
Game (Wild Game)		**Total for Game (Wild Game)**			**181**	
Honey	Group B1	Streptomycin	Croatia	51	1	1.96
Honey	Group B1	Sulfacetamide	Poland	235	1	0.43
Honey	Group B1	Sulfachlorpyrazine	Poland	54	1	1.85
Honey	Group B1	Sulfamerazine	Poland	261	1	0.38
Honey	Group B1	Sulfamethazin (sulfadimidin)	Poland	234	4	1.71
Honey	Group B1	Sulfathiazole	Poland	235	3	1.28
Honey	Group B1	Trimethoprim	Poland	53	1	1.89
Honey	Group B1	Tylon (Tylosin, Tylosin A)	Austria	107	1	0.93
Honey	**Group B1**	**Sub-total for Group B1**	**3**		**13**	
Honey	Group B2f	Amitraz (amitraz including the metabolites containing the 2,4 - dimethylaniline moiety expressed as amitraz)	Cyprus	12	1	8.33
Honey	**Group B2f**	**Sub-total for Group B2f**	**1**		**1**	
Honey	Group B3c	Copper (Cu)	Germany	27	14	51.85
Honey	Group B3c	Copper (Cu)	Norway	19	19	100.00
Honey	Group B3c	Lead (Pb)	Finland	9	2	22.22
Honey	Group B3c	Lead (Pb)	Italy	22	1	4.55
Honey	Group B3c	Lead (Pb)	Norway	19	1	5.26
Honey	Group B3c	Lead (Pb)	Romania	23	1	4.35
Honey	**Group B3c**	**Sub-total for Group B3c**	**5**		**38**	
Honey	Group B3f	Acetamiprid	Slovakia	10	1	10.00
Honey	**Group B3f**	**Sub-total for Group B3f**	**1**		**1**	
Honey		**Total for Honey**			**53**	
Horses	Group A3	Epinandrolone (19-Norepitestosterone)	Norway	3	1	33.33
Horses	Group A3	Nandrolone	Norway	3	1	33.33

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Horses	**Group A3**	**Sub-total for Group A3**	**1**		**2**	
Horses	Group A4	Alpha-Zearalanol (Zeranol)	Romania	13	2	15.38
Horses	Group A4	Beta Zearalanol (Taleranol)	Romania	13	2	15.38
Horses	Group A4	Zearalenol alpha	Romania	29	2	6.90
Horses	Group A4	Zearalenol beta	Romania	29	2	6.90
Horses	**Group A4**	**Sub-total for Group A4**	**1**		**8**	
Horses	Group B2e	Diclofen (Diclofenac)	France	35	1	2.86
Horses	Group B2e	Diclofen (Diclofenac)	Italy	33	1	3.03
Horses	Group B2e	Flunixin	Germany	24	1	4.17
Horses	Group B2e	Flunixin	Romania	54	1	1.85
Horses	Group B2e	Oxyphenbutazone Anhydrate	Ireland	63	1	1.59
Horses	**Group B2e**	**Sub-total for Group B2e**	**5**		**5**	
Horses	Group B3c	Cadmium (Cd)	Austria	8	1	12.50
Horses	Group B3c	Cadmium (Cd)	Germany	3	1	33.33
Horses	Group B3c	Cadmium (Cd)	Poland	131	1	0.76
Horses	Group B3c	Cadmium (Cd)	Slovenia	5	4	80.00
Horses	Group B3c	Cadmium (Cd)	Spain	15	2	13.33
Horses	Group B3c	Lead (Pb)	Spain	14	2	14.29
Horses	Group B3c	Total mercury	Germany	3	1	33.33
Horses	**Group B3c**	**Sub-total for Group B3c**	**5**		**12**	
Horses	Group B3d	Zearalenone	Romania	29	2	6.90
Horses	**Group B3d**	**Sub-total for Group B3d**	**1**		**2**	
Horses		**Total for Horses**			**29**	
Milk	Group A6	Chloramphenicol	Lithuania	239	6	2.51
Milk	Group A6	Chloramphenicol	Poland	291	1	0.34
Milk	**Group A6**	**Sub-total for Group A6**	**2**		**7**	
Milk	Group B1	Ampicillin	Latvia	210	1	0.48
Milk	Group B1	Ampicillin	Poland	1,568	1	0.06
Milk	Group B1	Benzylpenicillin (Penicillin G)	France	5	1	20.00

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Milk	Group B1	Benzylpenicillin (Penicillin G)	Germany	887	1	0.11
Milk	Group B1	Benzylpenicillin (Penicillin G)	Norway	229	1	0.44
Milk	Group B1	Cefapirin (Sum of cephapirin and desacetylcephapirin)	Estonia	177	1	0.56
Milk	Group B1	Sum of tetracycline and its 4-epimer	Poland	1,649	1	0.06
Milk	**Group B1**	**Sub-total for Group B1**	**6**		**7**	
Milk	Group B2a	Levamisole	Ireland	394	1	0.25
Milk	Group B2a	Sum of albendazole sulphoxide, albendazole sulphone, and albendazole 2-amino sulphone, expressed as albendazole	France	795	1	0.13
Milk	Group B2a	Sum of albendazole sulphoxide, albendazole sulphone, and albendazole 2-amino sulphone, expressed as albendazole	Ireland	394	2	0.51
Milk	Group B2a	Sum of extractable residues which may be oxidised to oxfendazole sulphone	Ireland	394	1	0.25
Milk	**Group B2a**	**Sub-total for Group B2a**	**2**		**5**	
Milk	Group B2e	Diclofen (Diclofenac)	Belgium	61	1	1.64
Milk	Group B2e	Diclofen (Diclofenac)	Croatia	114	3	2.63
Milk	Group B2e	Diclofen (Diclofenac)	Germany	1,434	10	0.70
Milk	Group B2e	Diclofen (Diclofenac)	Malta	175	1	0.57
Milk	Group B2e	Diclofen (Diclofenac)	Slovenia	205	1	0.49
Milk	Group B2e	Salicylic acid	Belgium	61	2	3.28
Milk	Group B2e	Salicylic acid	Germany	64	1	1.56
Milk	Group B2e	Salicylic acid	Netherlands	669	2	0.30
Milk	**Group B2e**	**Sub-total for Group B2e**	**6**		**21**	
Milk	Group B3d	Aflatoxin M1	Bulgaria	10	1	10.00
Milk	Group B3d	Aflatoxin M1	Croatia	66	2	3.03
Milk	Group B3d	Aflatoxin M1	Finland	87	1	1.15
Milk	**Group B3d**	**Sub-total for Group B3d**	**3**		**4**	

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Milk		**Total for Milk**			**44**	
Pigs	Group A2	Thiouracil	Netherlands	68	2	2.94
Pigs	**Group A2**	**Sub-total for Group A2**	**1**		**2**	
Pigs	Group A3	Boldenone	France	246	1	0.41
Pigs	Group A3	Boldenone	Malta	5	1	20.00
Pigs	Group A3	Boldenone-Alpha	Poland	114	1	0.88
Pigs	Group A3	Nandrolone	Austria	149	1	0.67
Pigs	Group A3	Nandrolone	Malta	11	2	18.18
Pigs	Group A3	Nandrolone	Poland	531	2	0.38
Pigs	Group A3	Normethandrolone	France	245	1	0.41
Pigs	Group A3	Progesterone	Lithuania	5	2	40.00
Pigs	Group A3	Progesterone-17-Alpha-Hydroxy	Lithuania	2	2	100.00
Pigs	**Group A3**	**Sub-total for Group A3**	**5**		**13**	
Pigs	Group A4	Alpha-Zearalanol (Zeranol)	Romania	141	2	1.42
Pigs	Group A4	Beta Zearalanol (Taleranol)	Romania	141	2	1.42
Pigs	Group A4	Zearalanone	Romania	141	2	1.42
Pigs	Group A4	Zearalenol alpha	Romania	60	3	5.00
Pigs	Group A4	Zearalenol alpha	Spain	9	1	11.11
Pigs	Group A4	Zearalenol beta	Romania	60	2	3.33
Pigs	**Group A4**	**Sub-total for Group A4**	**2**		**12**	
Pigs	Group A6	Chloramphenicol	Germany	2,489	3	0.12
Pigs	Group A6	Chloramphenicol	Spain	1,837	1	0.05
Pigs	Group A6	Hydroxymetronidazol (MNZOH)	Spain	465	1	0.22
Pigs	Group A6	Metronidazole	Spain	711	1	0.14
Pigs	Group A6	SEM (semicarbazide)	Czechia	30	1	3.33
Pigs	**Group A6**	**Sub-total for Group A6**	**3**		**7**	
Pigs	Group B1	Amoxycillin	Belgium	1,388	1	0.07
Pigs	Group B1	Amoxycillin	France	1,485	1	0.07
Pigs	Group B1	Benzylpenicillin (Penicillin G)	France	1,485	2	0.13

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Pigs	Group B1	Benzylpenicillin (Penicillin G)	Poland	1,756	1	0.06
Pigs	Group B1	Dihydrostreptomycin	Belgium	1,341	1	0.07
Pigs	Group B1	Dihydrostreptomycin	France	1,485	1	0.07
Pigs	Group B1	Dihydrostreptomycin	Poland	2,070	2	0.10
Pigs	Group B1	Doxycycline	Hungary	340	2	0.59
Pigs	Group B1	Doxycycline	Italy	759	1	0.13
Pigs	Group B1	Doxycycline	Poland	2,070	4	0.19
Pigs	Group B1	Doxycycline	Spain	3,609	5	0.14
Pigs	Group B1	Lincomycin	France	1,486	1	0.07
Pigs	Group B1	Lincomycin	Spain	3,159	2	0.06
Pigs	Group B1	Sulfachlorpyridazine	Italy	303	1	0.33
Pigs	Group B1	Sulfadiazine	Italy	1,173	3	0.26
Pigs	Group B1	Sulfadimethoxine	France	1,544	1	0.06
Pigs	Group B1	Sulfadimethoxine	Italy	1,185	2	0.17
Pigs	Group B1	Sulfadoxin	Italy	172	1	0.58
Pigs	Group B1	Sulfamerazine	Italy	1,184	1	0.08
Pigs	Group B1	Sulfamethazin (sulfadimidin)	Croatia	137	1	0.73
Pigs	Group B1	Sulfamethazin (sulfadimidin)	Italy	51	1	1.96
Pigs	Group B1	Sulfamethoxazole	Italy	1,171	1	0.09
Pigs	Group B1	Sulfamethoxypyridazine	Italy	444	1	0.23
Pigs	Group B1	Sulfamonomethoxine	Italy	1,159	1	0.09
Pigs	Group B1	Sulfapyridin	Italy	1,126	1	0.09
Pigs	Group B1	Sulfaquinoxaline	Italy	435	1	0.23
Pigs	Group B1	Sulfathiazole	Italy	1,186	1	0.08
Pigs	Group B1	Sulfisoxazol	Italy	53	1	1.89
Pigs	Group B1	Sulfonamides	Croatia	2	1	50.00
Pigs	Group B1	Sulfonamides	Italy	830	2	0.24
Pigs	Group B1	Sum of chlortetracyclin and its 4-epimer	Greece	113	2	1.77
Pigs	Group B1	Sum of chlortetracyclin and its 4-epimer	Italy	756	1	0.13

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Pigs	Group B1	Sum of chlortetracyclin and its 4-epimer	Poland	3,021	2	0.07
Pigs	Group B1	Sum of enrofloxacin and ciprofloxacin	Ireland	439	1	0.23
Pigs	Group B1	Sum of enrofloxacin and ciprofloxacin	Lithuania	97	1	1.03
Pigs	Group B1	Sum of enrofloxacin and ciprofloxacin	Poland	3,021	2	0.07
Pigs	Group B1	Sum of enrofloxacin and ciprofloxacin	Spain	6,647	1	0.02
Pigs	Group B1	Sum of oxytetracycline and its 4-epimer	Denmark	2,791	1	0.04
Pigs	Group B1	Sum of oxytetracycline and its 4-epimer	France	1,485	2	0.13
Pigs	Group B1	Sum of oxytetracycline and its 4-epimer	Germany	8,286	1	0.01
Pigs	Group B1	Sum of oxytetracycline and its 4-epimer	Netherlands	2,554	2	0.08
Pigs	Group B1	Sum of oxytetracycline and its 4-epimer	Romania	215	1	0.47
Pigs	Group B1	Sum of oxytetracycline and its 4-epimer	Sweden	341	1	0.29
Pigs	Group B1	Tilmicosin	Spain	1,180	1	0.08
Pigs	Group B1	Tulathromycin	Germany	8,038	1	0.01
Pigs	**Group B1**	**Sub-total for Group B1**	**15**		**65**	
Pigs	Group B2a	Levamisole	Netherlands	475	1	0.21
Pigs	Group B2a	Sum of extractable residues which may be oxidised to oxfendazole sulphone	Italy	257	1	0.39
Pigs	**Group B2a**	**Sub-total for Group B2a**	**2**		**2**	
Pigs	Group B2b	Decoquinate	Spain	109	1	0.92
Pigs	**Group B2b**	**Sub-total for Group B2b**	**1**		**1**	
Pigs	Group B2e	Diclofen (Diclofenac)	Cyprus	13	1	7.69
Pigs	**Group B2e**	**Sub-total for Group B2e**	**1**		**1**	
Pigs	Group B3a	Non-dioxin-like PCBs UB	Austria	62	1	1.61

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Pigs	Group B3a	PCB-101	France	913	1	0.11
Pigs	Group B3a	PCB-138	France	913	1	0.11
Pigs	Group B3a	PCB-153	France	913	1	0.11
Pigs	Group B3a	PCB-180	France	913	1	0.11
Pigs	Group B3a	PCB-28	France	913	1	0.11
Pigs	Group B3a	PCB-52	France	913	1	0.11
Pigs	Group B3a	TEQ Dioxin-like PCBs LB	France	370	1	0.27
Pigs	Group B3a	TEQ Dioxin-like PCBs MB	France	458	1	0.22
Pigs	Group B3a	TEQ Dioxin-like PCBs UB	France	502	1	0.20
Pigs	Group B3a	TEQ dioxins and dioxin-like PCBs LB	France	355	1	0.28
Pigs	Group B3a	TEQ dioxins and dioxin-like PCBs UB	France	458	1	0.22
Pigs	**Group B3a**	**Sub-total for Group B3a**	**2**		**12**	
Pigs	Group B3c	Cadmium (Cd)	France	471	1	0.21
Pigs	Group B3c	Cadmium (Cd)	Germany	1,362	7	0.51
Pigs	Group B3c	Cadmium (Cd)	Netherlands	278	1	0.36
Pigs	Group B3c	Cadmium (Cd)	Spain	649	1	0.15
Pigs	Group B3c	Copper (Cu)	Austria	52	8	15.38
Pigs	Group B3c	Copper (Cu)	Germany	1,362	49	3.60
Pigs	Group B3c	Copper (Cu)	Norway	24	2	8.33
Pigs	Group B3c	Lead (Pb)	Italy	160	1	0.62
Pigs	Group B3c	Total mercury	Germany	1,362	40	2.94
Pigs	Group B3c	Total mercury	Netherlands	278	1	0.36
Pigs	**Group B3c**	**Sub-total for Group B3c**	**7**		**111**	
Pigs	Group B3d	Ochratoxin A	Poland	110	2	1.82
Pigs	Group B3d	Zearalenone	Romania	60	3	5.00
Pigs	**Group B3d**	**Sub-total for Group B3d**	**2**		**5**	
Pigs	Group B3f	Fipronil (sum Fipronil and sulfone metabolite (MB46136) expressed as Fipronil)	Spain	1	1	100.00
Pigs	**Group B3f**	**Sub-total for Group B3f**	**1**		**1**	

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Pigs		**Total for Pigs**			**232**	
Poultry	Group A6	Metronidazole	Czechia	98	1	1.02
Poultry	Group A6	Nitrofurazone	Germany	209	1	0.48
Poultry	**Group A6**	**Sub-total for Group A6**	**2**		**2**	
Poultry	Group B1	Dihydrostreptomycin	Austria	196	1	0.51
Poultry	Group B1	Doxycycline	Belgium	461	1	0.22
Poultry	Group B1	Doxycycline	Bulgaria	26	1	3.85
Poultry	Group B1	Doxycycline	Poland	2,074	2	0.10
Poultry	Group B1	Sulfadimethoxine	Italy	695	1	0.14
Poultry	Group B1	Sum of chlortetracyclin and its 4-epimer	Bulgaria	26	1	3.85
Poultry	**Group B1**	**Sub-total for Group B1**	**5**		**7**	
Poultry	Group B2a	Oxibendazole	Germany	406	1	0.25
Poultry	**Group B2a**	**Sub-total for Group B2a**	**1**		**1**	
Poultry	Group B2b	Diclazuril	Czechia	98	1	1.02
Poultry	Group B2b	Halofuginone	Croatia	38	1	2.63
Poultry	Group B2b	Lasalocid	Italy	572	1	0.17
Poultry	Group B2b	Monensin	Greece	40	1	2.50
Poultry	Group B2b	Monensin sodium	Czechia	98	2	2.04
Poultry	Group B2b	Salinomycin sodium	Czechia	98	1	1.02
Poultry	Group B2b	Toltrazurilsulfon	Poland	753	1	0.13
Poultry	**Group B2b**	**Sub-total for Group B2b**	**5**		**8**	
Poultry	Group B2e	Diclofen (Diclofenac)	Austria	24	1	4.17
Poultry	**Group B2e**	**Sub-total for Group B2e**	**1**		**1**	
Poultry	Group B2f	Nicotine	Germany	107	2	1.87
Poultry	**Group B2f**	**Sub-total for Group B2f**	**1**		**2**	
Poultry	Group B3a	Sum of 6 PCB indicators	Spain	349	1	0.29
Poultry	**Group B3a**	**Sub-total for Group B3a**	**1**		**1**	
Poultry	Group B3c	Cadmium (Cd)	France	234	1	0.43
Poultry	Group B3c	Cadmium (Cd)	Germany	182	1	0.55

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Poultry	Group B3c	Copper (Cu)	Germany	181	1	0.55
Poultry	Group B3c	Lead (Pb)	France	234	1	0.43
Poultry	**Group B3c**	**Sub-total for Group B3c**	**2**		**4**	
Poultry		**Total for Poultry**			**26**	
Rabbits	Group B1	Sulfadimethoxine	France	71	4	5.63
Rabbits	Group B1	Trimethoprim	France	71	1	1.41
Rabbits	**Group B1**	**Sub-total for Group B1**	**1**		**5**	
Rabbits		**Total for Rabbits**			**5**	
Sheep/goats	Group A2	Thiouracil	Iceland	14	2	14.29
Sheep/goats	Group A2	Thiouracil	Ireland	19	2	10.53
Sheep/goats	**Group A2**	**Sub-total for Group A2**	**2**		**4**	
Sheep/goats	Group A3	Boldenone	Austria	32	2	6.25
Sheep/goats	Group A3	Boldenone-Alpha	Cyprus	2	1	50.00
Sheep/goats	Group A3	Boldenone-Alpha	Norway	20	9	45.00
Sheep/goats	Group A3	Epinandrolone (19-Norepitestosterone)	Austria	32	3	9.38
Sheep/goats	Group A3	Epinandrolone (19-Norepitestosterone)	France	53	4	7.55
Sheep/goats	Group A3	Epinandrolone (19-Norepitestosterone)	Norway	20	6	30.00
Sheep/goats	**Group A3**	**Sub-total for Group A3**	**4**		**25**	
Sheep/goats	Group A6	SEM (semicarbazide)	Austria	10	2	20.00
Sheep/goats	**Group A6**	**Sub-total for Group A6**	**1**		**2**	
Sheep/goats	Group B1	Dihydrostreptomycin	France	518	2	0.39
Sheep/goats	Group B1	Dihydrostreptomycin	Greece	75	1	1.33
Sheep/goats	Group B1	Sulfadiazine	Spain	344	1	0.29
Sheep/goats	Group B1	Tulathromycin	France	518	2	0.39
Sheep/goats	**Group B1**	**Sub-total for Group B1**	**3**		**6**	
Sheep/goats	Group B2a	Closantel	France	193	1	0.52
Sheep/goats	Group B2a	Closantel	Ireland	382	2	0.52
Sheep/goats	Group B2a	Sum of extractable residues which may be oxidised to oxfendazole sulphone	Iceland	60	1	1.67

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Sheep/goats	**Group B2a**	**Sub-total for Group B2a**	**3**		**4**	
Sheep/goats	Group B3b	Phoxim	Germany	12	1	8.33
Sheep/goats	**Group B3b**	**Sub-total for Group B3b**	**1**		**1**	
Sheep/goats	Group B3c	Cadmium (Cd)	Denmark	4	1	25.00
Sheep/goats	Group B3c	Cadmium (Cd)	France	79	4	5.06
Sheep/goats	Group B3c	Cadmium (Cd)	Norway	58	4	6.90
Sheep/goats	Group B3c	Cadmium (Cd)	Poland	21	2	9.52
Sheep/goats	Group B3c	Cadmium (Cd)	Spain	81	1	1.23
Sheep/goats	Group B3c	Copper (Cu)	Germany	44	11	25.00
Sheep/goats	Group B3c	Copper (Cu)	Norway	58	20	34.48
Sheep/goats	Group B3c	Total mercury	Germany	45	6	13.33
Sheep/goats	**Group B3c**	**Sub-total for Group B3c**	**6**		**49**	
Sheep/goats		**Total for Sheep/goats**			**91**	

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

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Aquaculture	Group B3e	Sum of cristal violet and leucocristal violet	Estonia	12	1	8.33
Aquaculture	Group B3e	Sum of malachite green and leucomalachite green	Estonia	12	2	16.67
Aquaculture	Group B3e	Sum of malachite green and leucomalachite green	Germany	151	14	9.27
Aquaculture	Group B3e	Sum of malachite green and leucomalachite green	Poland	4	1	25.00
Aquaculture	**Group B3e**	**Sub-total for Group B3e**	**3**		**18**	
Aquaculture		**Total for Aquaculture**			**18**	
Bovines	Group A2	Thiouracil	Greece	7	3	42.86
Bovines	**Group A2**	**Sub-total for Group A2**	**1**		**3**	
Bovines	Group B1	Amoxycillin	Ireland	1,108	1	0.09
Bovines	Group B1	Ampicillin	Italy	435	2	0.46
Bovines	Group B1	Benzylpenicillin (Penicillin G)	Austria	432	1	0.23
Bovines	Group B1	Marbofloxacin	Italy	435	1	0.23
Bovines	Group B1	Sulfadiazine	Italy	430	1	0.23
Bovines	Group B1	Sulfamethazin (sulfadimidin)	Ireland	2	1	50.00
Bovines	Group B1	Sulfamethoxazole	Spain	105	1	0.95
Bovines	Group B1	Sum of oxytetracycline and its 4-epimer	Ireland	1,107	1	0.09
Bovines	Group B1	Sum of oxytetracycline and its 4-epimer	Italy	437	10	2.29
Bovines	Group B1	Sum of tetracycline and its 4-epimer	Austria	431	1	0.23
Bovines	Group B1	Trimethoprim	Italy	430	1	0.23
Bovines	**Group B1**	**Sub-total for Group B1**	**4**		**21**	
Bovines	Group B2e	Meloxicam	Germany	3	2	66.67
Bovines	**Group B2e**	**Sub-total for Group B2e**	**1**		**2**	

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Bovines	Group B2f	Triamcinolone acetonide	Italy	223	1	0.45
Bovines	**Group B2f**	**Sub-total for Group B2f**	**1**		**1**	
Bovines	Group B3a	Hexachlorobenzene	Germany	3	2	66.67
Bovines	**Group B3a**	**Sub-total for Group B3a**	**1**		**2**	
Bovines	Group B3c	Copper (Cu)	Austria	13	1	7.69
Bovines	Group B3c	Lead (Pb)	Austria	18	4	22.22
Bovines	**Group B3c**	**Sub-total for Group B3c**	**1**		**5**	
Bovines		**Total for Bovines**			**34**	
Eggs	Group B2b	Diclazuril	Croatia	2	2	100.00
Eggs	Group B2b	Salinomycin	Poland	6	1	16.67
Eggs	**Group B2b**	**Sub-total for Group B2b**	**2**		**3**	
Eggs	Group B3a	TEQ Dioxins and dioxin-like PCBs MB	Germany	2	2	100.00
Eggs	Group B3a	TEQ dioxins (PCDD and PCDF) LB	Germany	2	2	100.00
Eggs	Group B3a	TEQ dioxins and dioxin-like PCBs LB	Germany	2	2	100.00
Eggs	Group B3a	WHO-PCDD/F-PCB-TEQ	Germany	4	2	50.00
Eggs	Group B3a	WHO-PCDD/F-TEQ	Germany	4	2	50.00
Eggs	Group B3a	WHO-PCDD/F-TEQ	Iceland	4	2	50.00
Eggs	**Group B3a**	**Sub-total for Group B3a**	**2**		**12**	
Eggs		**Total for Eggs**			**15**	
Game (Wild Game)	Group B3c	Lead (Pb)	Slovakia	1	1	100.00
Game (Wild Game)	**Group B3c**	**Sub-total for Group B3c**	**1**		**1**	
Game (Wild Game)		**Total for Game (Wild Game)**			**1**	
Honey	Group B1	Sulfacetamide	Poland	7	1	14.29
Honey	Group B1	Sulfamerazine	Poland	7	1	14.29
Honey	Group B1	Sulfamethazin (sulfadimidin)	Poland	7	2	28.57
Honey	Group B1	Sulfathiazole	Poland	7	2	28.57
Honey	Group B1	Trimethoprim	Poland	3	1	33.33

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Honey	Group B1	Tylon (Tylosin, Tylosin A)	Austria	1	1	100.00
Honey	**Group B1**	**Sub-total for Group B1**	**2**		**8**	
Honey		**Total for Honey**			**8**	
Milk	Group B1	Cefalonium	Italy	30	1	3.33
Milk	Group B1	Cloxacillin	Germany	3	1	33.33
Milk	**Group B1**	**Sub-total for Group B1**	**2**		**2**	
Milk	Group B2e	Diclofen (Diclofenac)	Germany	7	1	14.29
Milk	Group B2e	Salicylic acid	Netherlands	1	1	100.00
Milk	**Group B2e**	**Sub-total for Group B2e**	**2**		**2**	
Milk	Group B3d	Aflatoxin M1	Italy	28	2	7.14
Milk	**Group B3d**	**Sub-total for Group B3d**	**1**		**2**	
Milk		**Total for Milk**			**6**	
Pigs	Group A4	Zearalenol alpha	Romania	1	1	100.00
Pigs	Group A4	Zearalenol beta	Romania	1	1	100.00
Pigs	**Group A4**	**Sub-total for Group A4**	**1**		**2**	
Pigs	Group A6	Chloramphenicol	Germany	30	11	36.67
Pigs	**Group A6**	**Sub-total for Group A6**	**1**		**11**	
Pigs	Group B1	Gentamicin	Malta	25	1	4.00
Pigs	**Group B1**	**Sub-total for Group B1**	**1**		**1**	
Pigs	Group B3c	Copper (Cu)	Germany	15	3	20.00
Pigs	Group B3c	Total mercury	Germany	10	15	150.00
Pigs	**Group B3c**	**Sub-total for Group B3c**	**1**		**18**	
Pigs	Group B3d	Zearalenone	Romania	1	1	100.00
Pigs	**Group B3d**	**Sub-total for Group B3d**	**1**		**1**	
Pigs		**Total for Pigs**			**33**	
Sheep/goats	Group A3	Boldenone	Austria	13	3	23.08
Sheep/goats	**Group A3**	**Sub-total for Group A3**	**1**		**3**	
Sheep/goats	Group B1	Sum of oxytetracycline and its 4-epimer	Spain	133	31	23.31

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Sheep/goats	**Group B1**	**Sub-total for Group B1**	**1**		**31**	
Sheep/goats	Group B3a	Hexachlorobenzene	Austria	14	1	7.14
Sheep/goats	Group B3a	Non-dioxin-like PCBs UB	Austria	14	2	14.29
Sheep/goats	**Group B3a**	**Sub-total for Group B3a**	**1**		**3**	
Sheep/goats	Group B3c	Copper (Cu)	Germany	88	81	92.05
Sheep/goats	**Group B3c**	**Sub-total for Group B3c**	**1**		**81**	
Sheep/goats		**Total for Sheep/goats**			**118**	

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

Product gategory	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Aquaculture	Group B1	Sulfamethoxazole	Germany	116	1	0.86
Aquaculture	**Group B1**	**Sub-total for Group B1**	**1**		**1**	
Aquaculture	Group B2a	Avermectin B1a	Germany	17	1	5.88
Aquaculture	**Group B2a**	**Sub-total for Group B2a**	**1**		**1**	
Aquaculture	Group B3c	Cadmium (Cd)	Estonia	4	1	25.00
Aquaculture	Group B3c	Cadmium (Cd)	Germany	115	2	1.74
Aquaculture	Group B3c	Cadmium (Cd)	Netherlands	54	1	1.85
Aquaculture	Group B3c	Cadmium (Cd)	Poland	5	1	20.00
Aquaculture	Group B3c	Total mercury	Germany	115	7	6.09
Aquaculture	**Group B3c**	**Sub-total for Group B3c**	**4**		**12**	
Aquaculture		**Total for Aquaculture**			**14**	
Pigs	Group A6	SEM (semicarbazide)	Portugal	1	1	100.00
Pigs	**Group A6**	**Sub-total for Group A6**	**1**		**1**	
Pigs		**Total for Pigs**			**1**	
Sheep/goats	Group A6	SEM (semicarbazide)	Germany	13	1	7.69
Sheep/goats	**Group A6**	**Sub-total for Group A6**	**1**		**1**	
Sheep/goats		**Total for Sheep/goats**			**1**	

Appendix D – List of non-compliant results: 'Other' sampling

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Bovines	Group B1	Amoxycillin	Germany	66	2	3.03
Bovines	Group B1	Benzathine-Benzylpenicillin	Germany	1	1	100.00
Bovines	Group B1	Benzylpenicillin (Penicillin G)	Germany	18,557	12	0.06
Bovines	Group B1	Dihydrostreptomycin	Germany	54	1	1.85
Bovines	Group B1	Doxycycline	Germany	18,557	1	0.01
Bovines	Group B1	Erythromycin	Italy	28	1	3.57
Bovines	Group B1	Marbofloxacin	Germany	18,557	6	0.03
Bovines	Group B1	Sulfonamides	Germany	66	3	4.55
Bovines	Group B1	Sulfonamides	Italy	33	1	3.03
Bovines	Group B1	Sum of chlortetracyclin and its 4-epimer	Germany	18,557	1	0.01
Bovines	Group B1	Sum of enrofloxacin and ciprofloxacin	Germany	18,557	1	0.01
Bovines	Group B1	Sum of florfenicol and its metabolites measured as florfenicol-amine	Germany	41	2	4.88
Bovines	Group B1	Sum of oxytetracycline and its 4-epimer	Germany	18,557	3	0.02
Bovines	Group B1	Sum of tetracycline and its 4-epimer	Germany	18,557	8	0.04
Bovines	Group B1	Tulathromycin	Germany	18,556	1	0.01
Bovines	**Group B1**	**Sub-total for Group B1**	**2**		**44**	
Bovines	Group B2e	Flunixin	Germany	29	2	6.90
Bovines	Group B2e	Meloxicam	Germany	31	9	29.03
Bovines	**Group B2e**	**Sub-total for Group B2e**	**1**		**11**	
Bovines	Group B2f	Dexamethasone	Germany	40	7	17.50
Bovines	**Group B2f**	**Sub-total for Group B2f**	**1**		**7**	
Bovines		**Total for Bovines**			**62**	
Eggs	Group B2b	Narasin	France	81	1	1.23
Eggs	**Group B2b**	**Sub-total for Group B2b**	**1**		**1**	
Eggs		**Total for Eggs**			**1**	
Game (Wild Game)	Group B3c	Lead (Pb)	France	17	5	29.41

Product group	Residue group	Substance	Sampling country	Samples analysed	Non-compliant results	% Non-compliant
Game (Wild Game)	**Group B3c**	**Sub-total for Group B3c**	**1**		**5**	
Game (Wild Game)		**Total for Game (Wild Game)**			**5**	
Honey	Group B3b	Glyphosate	Italy	60	1	1.67
Honey	**Group B3b**	**Sub-total for Group B3b**	**1**		**1**	
Honey		**Total for Honey**			**1**	
Pigs	Group B1	Amoxycillin	Germany	224	4	1.79
Pigs	Group B1	Ampicillin	Germany	234	1	0.43
Pigs	Group B1	Benzylpenicillin (Penicillin G)	Germany	254,061	1	0.00
Pigs	Group B1	Doxycycline	Germany	254,063	11	0.00
Pigs	Group B1	Marbofloxacin	Germany	254,062	2	0.00
Pigs	Group B1	Sulfonamides	Germany	230	19	8.26
Pigs	Group B1	Sum of chlortetracyclin and its 4-epimer	Germany	254,062	2	0.00
Pigs	Group B1	Sum of enrofloxacin and ciprofloxacin	Germany	254,062	4	0.00
Pigs	Group B1	Sum of oxytetracycline and its 4-epimer	Germany	254,062	10	0.00
Pigs	Group B1	Trimethoprim	Germany	234	4	1.71
Pigs	Group B1	Tulathromycin	Germany	254,058	1	0.00
Pigs	**Group B1**	**Sub-total for Group B1**	**1**		**59**	
Pigs		**Total for Pigs**			**59**	
Rabbits	Group B1	Tulathromycin	France	4	1	25.00
Rabbits	**Group B1**	**Sub-total for Group B1**	**1**		**1**	
Rabbits		**Total for Rabbits**			**1**	
Sheep/goats	Group B1	Sum of oxytetracycline and its 4-epimer	France	16	1	6.25
Sheep/goats	**Group B1**	**Sub-total for Group B1**	**1**		**1**	
Sheep/goats		**Total for Sheep/goats**			**1**	

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

GROUP A – Substances having anabolic effect and unauthorised substances

A1 Stilbenes, stilbene derivatives, and their salts and esters

A2 Antithyroid agents

A3 Steroids

A4 Resorcylic acid lactones, including zeranol

A5 Beta-agonists

A6 Compounds included in Annex IV to Council Regulation (EEC) N° 2377/90 of 26 June 1990

GROUP B – Veterinary drugs and contaminants

B1 Antibacterial substances, including sulphonamides, quinolones

B2 Other veterinary drugs

B2a Anthelmintics

B2b Anticoccidials

B2c Carbamates and pyrethroids

B2d Sedatives

B2e Non-steroidal anti-inflammatory drugs (NSAIDs)

B2f Other pharmacologically active substances

B3 Other substances and environmental contaminants

B3a Organochlorine compounds, including PCBs

B3b Organophosphorus compounds

B3c Chemical elements

B3d Mycotoxins

B3e Dyes

B3f Others