

Summary Report on 2024 Residue Monitoring of Irish Farmed Finfish & Border Control Post Fishery Product Testing



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Foras na Mara
Marine Institute

**Summary Report on 2024 Residue Monitoring
of Irish Farmed Finfish
&
Border Control Post Fishery Product Testing**

September 2025

CHEMREP 2025-001

Marine Institute

Rinville, Oranmore, County Galway



*Foras na Mara
Marine Institute*

MISSION STATEMENT

The Marine Institute provides scientific, research and development services to government, agencies, industry and society that support the sustainable use of our maritime area, the protection and restoration of marine ecosystems, and promote a shared understanding of the ocean.

OUR VISION

The Marine Institute is a national and international leader in ocean knowledge that benefits people, policy and planet.

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Part A

Summary Report on 2024 Residue Monitoring of Farmed Finfish - Plan 1

**Carried out
in accordance with**

Official Control Regulation (EU) 2017/625¹,

Commission Delegated Regulation (EU) 2022/1644²,

***Commission Implementing Regulation (EU) 2022/1646³ & Commission Implementing
Regulation (EU) 2021/808⁴***

1. 2024 OVERALL SUMMARY

In 2024, in excess of 1,982 tests and a total of 12,882 measurements were carried out on 92 samples of farmed finfish for a range of residues of pharmacologically active substances. Implementation of the Aquaculture 2024 risk-based control plan for production (Plan 1) involves taking samples at both farm and processing plant in accordance with Commission Delegated Regulation (EU) 2022/1644, Commission Implementing Regulation (EU) 2022/1646 and Annex II of Commission Implementing Regulation (EU) 2021/808²:

- 46 target samples were taken at harvest: 36 farmed salmon and 10 freshwater trout.
- 46 target samples were taken at other stages of production (OSOP): 36 salmon smolts and 10 freshwater trout.

All 2024 samples under plan 1 were compliant. For target sampling of farmed fish, a summary table of the residue results for 2023 to 2024 is outlined in Table 1.

Overall, the outcome for aquaculture remains one of consistently low occurrence of residues in farmed finfish, with no non-compliant target residues results for the period 2006-2014, 0.11% and 0.10% non-compliant target residues results in 2015 and 2016 respectively and no non-compliant target results for the period 2017 to 2024.

¹ Commission Delegated Regulation (EU) 2019/478 of 14 January 2019 amending Regulation (EU) 2017/625.

² Commission Delegated Regulation (EU) 2024/2562 of 3 June 2024 amending Delegated Regulation (EU) 2022/1644.

³ Commission Delegated Regulation (EU) 2024/2563 of 24 September 2024 amending Delegated Regulation (EU) 2022/1646.

⁴ Commission Implementing Regulation (EU) 2024/2052 of 30 July 2024 amending Implementing Regulation (EU) 2021/808.

Table 1: Summary Target Results for Residue Program 2023-2024

Year	No. of Target Samples ¹	Total ^Group A ²	Total ^^Group B ²	No. of Results ³ /non-compliant	Non-Compliant Results (%)
2024	92 (46, 46)	92/0	92/0	12,882/0	0
2023	92 (46, 46)	92/0	92/0	10,078/0	0

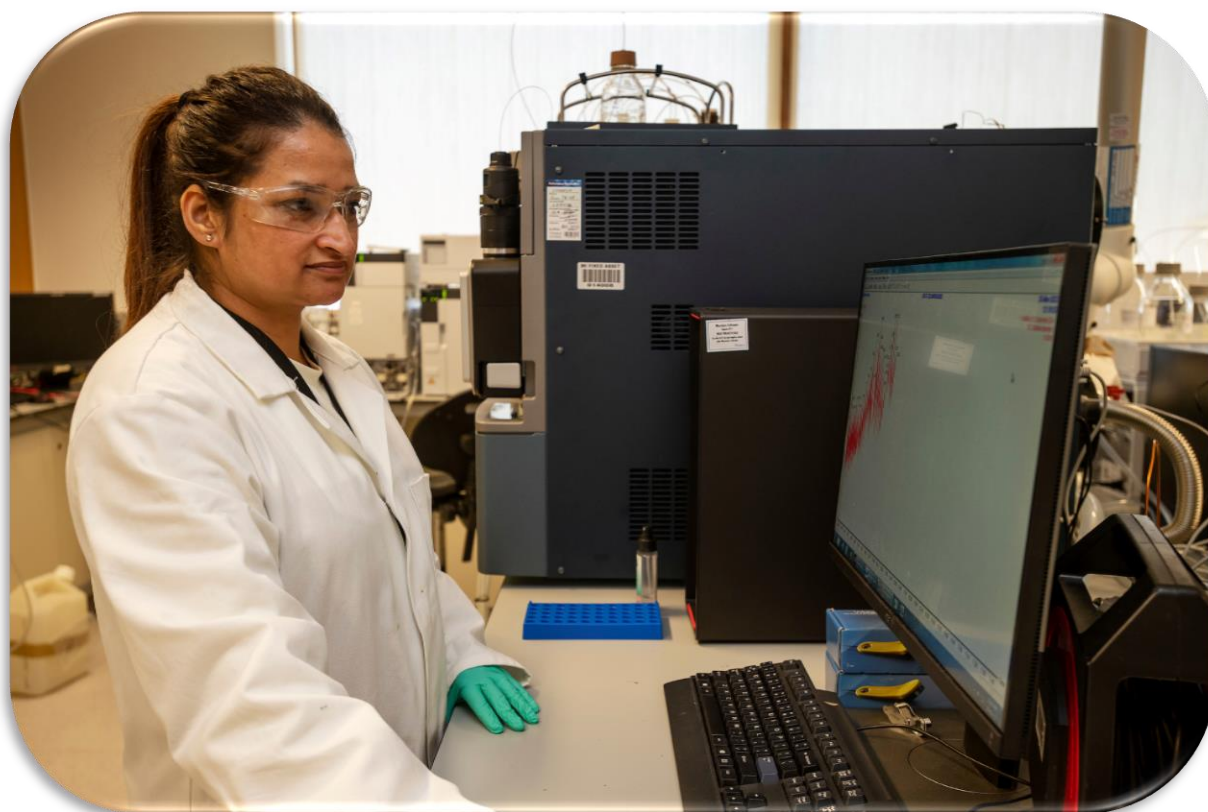
[^]Group A substances – Prohibited or unauthorised pharmacologically active substances in food-producing animals.

^{^^}Group B substances – Pharmacologically active substances authorised for use in food-producing animals.

¹ Target samples (sampled at harvest, sampled at other stages of production).

² No. of samples tested/No. of samples non-compliant.

³ Total no. of results as target samples taken for Group A and Group B substances are tested for multiple residue categories within each group/No. of non-compliant results.



2. BACKGROUND

European Member States have a responsibility to monitor the use of veterinary medicines in food producing animals, to ensure that produce from these animals do not contain residues that could be harmful to consumers. As with other farmed animals, farmed finfish can be subject to disease and infestation which can have animal welfare, environmental and commercial implications. Therefore, authorised veterinary medicines and treatments may be used, and sometimes must be used, to control disease and infestation as part of health control plans e.g. antibacterial and antiparasitic treatments.

All EU countries must implement control plans for residues to comply with EU legislation to detect the illegal use of prohibited or unauthorised substances or misuse of authorised veterinary medicines in food producing animals and to have in place a residue National Risk-Based Control Plan (NRBCP) for the monitoring of certain chemical substances and residues in a range of food producing species and products e.g. cattle, pigs, sheep, farmed finfish. Similarly, non- EU countries exporting food of animal origin to the EU must also have control plans for residues with the aim is to detect illegal use of prohibited or unauthorised substances and to monitor use of authorised substances.

The residues National Risk-Based Control Plan (NRBCP - Plan 1) sets out the monitoring requirements for residues in animal products in accordance with Official Control Regulation (EU) 2017/625, Commission Delegated Regulation (EU) 2022/1644, Commission Implementing Regulation (EU) 2022/1646 and Annex II of Commission Implementing Regulation (EU) 2021/808 and their amendments. Regulation (EU) 2017/625 repealed Residue Directive (Council Directive 96/23/EC) and laid down transitional measures until 14th December 2022, with the new residue regulation came into force in 14th December 2022 (Commission Delegated Regulation (EU) 2022/1644 & Commission Implement Regulation (EU) 2022/1646 and their amendments).

Under EU legislation, Article 19 of Official Control Regulation (EU) 2017/625, each member state is required to implement a residue National Risk-Based Control Plan (NRBCP - Plan 1) which is submitted annually to the European Commission for approval. As part of NRBCP – Plan 1, official samples taken for Plan 1 are ‘targeted’ in accordance with regulations where official samples are taken with the aim of maximising the possibility of detecting non-compliance with maximum residue limits (MRLs) established under EU legislation and detecting the presence of prohibited or unauthorised pharmacologically active substances and residues.

Plan 1 for Aquaculture in Ireland is specifically for farmed finfish and forms part of the NRBCP for other commodities. The overall national Plan is submitted by DAFM to European Commission (EC) where it is reviewed and approved with support from European Union Reference Laboratories (EURLs).

On behalf of the Department of Agriculture, Food and Marine (DAFM), the Marine Institute (MI) carries out monitoring of chemical residues for aquaculture by collecting and testing samples of farmed fish for a wide range of target residues. The main objectives of the NRBCP – Plan 1 for Aquaculture is to ensure farmed fish are fit for human consumption, to provide a body of data showing that Irish farmed fish is of high quality, to promote good practices in aquaculture and to comply with legislation.

For the aquaculture sector, the Sea Fisheries Protection Authority (SFPA) with technical support from the MI is responsible for residue controls on farmed finfish to ensure compliance with the Official Control Regulation (EU) 2017/625 and Commission Delegated Regulation (EU) 2022/1644, Commission Implementing Regulation (EU) 2022/1646 and Commission Implementing Regulation (EU) 2021/808 and their amendments.

The Food Safety Authority of Ireland (FSAI) co-ordinates the activities of the various departments and agencies involved in delivering this programme.

A summary of each department and agencies’ role with respect to the NRBCP – Plan 1 is outlined in Table 2.

Table 2: Department and Agency Roles

Department of Agriculture Food and Marine (DAFM) - Implements the overall residues controls in Ireland.
Food Safety Authority of Ireland (FSAI) - Coordinates the activities of the departments and agencies involved.
Sea Fisheries Protection Authority (SFPA) - Is responsible for residue controls on farmed finfish to ensure compliance with the Residue Regulations for finfish aquaculture. including follow up investigation for non-compliant results.
Marine Institute (MI) - On behalf of DAFM and FSAI, the Institute implements a sampling and testing programme for monitoring of chemical residues for farmed fish. The Institute, as official laboratory, provides scientific support to the FSAI, SFPA and DAFM in their roles as competent authorities and is the National Reference Laboratory (NRL) for a number of substances in aquaculture.
DAFM Veterinary Inspectors* - Carries out routine on-farm inspections to verify compliance with various regulations including fish health, animal remedies, feedstuffs, etc.

*In 2025, DAFM Veterinary Inspectors commenced sampling for on farm OSOP samples for NRBCP aquaculture Plan 1

2.1 National Risk Based Control Plan (NRBCP - Plan 1)

Annually, the MI and DAFM prepare the NRBCP – Plan 1 for Aquaculture, which is reviewed by all parties at the Cross Agency meeting (FSAI, DAFM, SFPA and MI). The overall NRBCP – Plan 1 once agreed and finalised is then submitted by DAFM by 31st March of each year to the European Commission (EC) for evaluation. The NRBCP – Plan 1 sets out the monitoring plan, including species, sample numbers and target substances in line with the specific requirements of the regulations.

The NRBCP – Plan 1 is reviewed by the Commission with support from EURLs and communicates its evaluation with comments or recommendations within 4 months of receipt of the plan which Member States are required to review and prepare a revised and updated plan incorporating the comments no later than 31st March of the following year. Where the Commission considers the plan would impair the effectiveness of official controls it will request member state to submit an updated plan addressing the Commissions comments at an earlier date.

The national legal basis for the Residue Monitoring Plan is provided for in the Veterinary Medicinal Products, Medicated Feed and Fertilisers Regulation Act 2023 and other relevant legislation in particular, the Control of Animal Remedies and their Residues Regulations, 2009. Figure 1 illustrates the National Aquaculture Residue Control Cycle. The 2024 Aquaculture NRBCP (Plan 1) is available in Appendix 6 and as required by Commission Implementing Regulation (EU) 2022/1646, DAFM submit addition supporting information with the NRBCP Plan 1 as detailed in Figure 1 and 2.

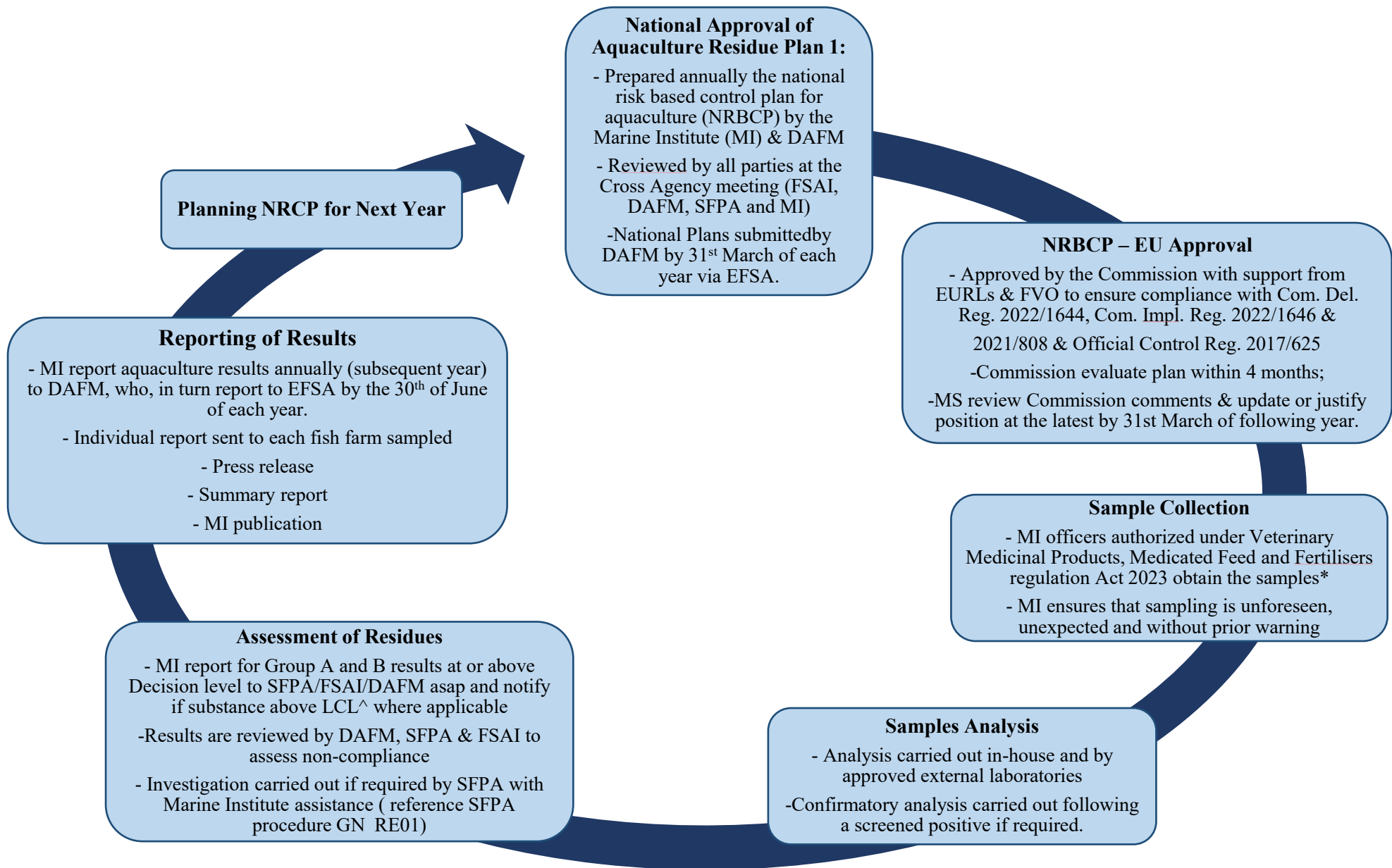


Figure 1: National Aquaculture Residue Control Cycle

* In 2025, DAFM Vets commenced sampling for on farm OSOP samples for Plan 1.

[^] Lowest Calibration Level

2.2 Scope of the Aquaculture Residue National Risk Based Control Plan (NRBCP - Plan 1)

Implementation of the Aquaculture NRBCP – Plan 1 involves taking farmed finfish samples at farm and primary processing/packing levels and analysing these samples at the Marine Institute and at other officially approved laboratories holding accreditation to the International Standard (ISO/IEC 17025). Official samples taken for Plan 1 are ‘targeted’ in accordance with regulations where official samples are taken with the aim of maximising the possibility of detecting non-compliance with maximum residue limits (MRLs) established under EU legislation and detecting the presence of prohibited or unauthorised pharmacologically active substances and residues.

All analytical methods used in the NRCP are accredited to ISO/IEC 17025. (This is the international standard that ensures analytical methods are fit for purpose). Testing as part of the Aquaculture Plan 1 is carried out in-house in the Marine Institute and by approved external laboratories. The Institute is subject to a range of audits including an annual Irish National Accreditation Board (INAB) audit in relation to ISO/IEC 17025. The scope of this testing under the NRBCP – Plan 1 is comprehensive covering the following broad categories (Group A and Group B) as outlined in Table 3.

Table 3: NRBCP (Plan 1) testing categories for Aquaculture

Category	Details
Group A <i>Prohibited or unauthorised</i>	Prohibited or unauthorised pharmacologically active substances in food-producing animals . These compounds should not be present as no safe limit can be set for their residue e.g. dyes, steroids, chloramphenicol, nitrofurans, nitroimidazoles, dapson, unauthorised antimicrobial substances such as nalidixic acid, norfloxacin and demeclocycline.
Group B <i>Authorised</i>	Authorised pharmacologically active substances for use in food-producing animals and these medicines may be used and should be below statutory Maximum Residue Limits – MRLs* . e.g. sea lice treatments - emamectin, deltamethrin

**MRL = maximum concentration allowable in the edible portion of the animal which should not be exceeded at the time of harvest. The European Medicines Agency (EMA) is responsible for assessing MRLs.*

Substances groups which require to be tested for aquaculture in accordance with Annex II of Commission Delegated Regulation (EU) 2022/1644 are detailed in Table 4 and 5.

Table 4: List of substances groups required to be included in the Aquaculture NRBCP (Plan1) for Group A¹

A1 Substances with hormonal and thyrostatic action and beta agonists the use of which is prohibited under Council Directive 96/22/EC:		
A1	(a)	Stilbenes
	(c)	Steroids
A2 Prohibited substances listed in Table 2 of the Annex to Regulation (EU) No 37/2010:		
A2	(a)	Chloramphenicol
	(b)	Nitrofurans
	(c)	Dimetridazole, metronidazole, ronidazole and other nitroimidazoles
	(d)	Other substances e.g. dapsone
A3 Pharmacologically active substances, not listed in Table 1 of the Annex to Regulation (EU) No 37/2010 or substances not authorised for use in feed for food-producing animals in the Union according to Regulation (EU) No 1831/2003 of the European Parliament and of the Council:		
A3	(a)	Dyes
	(b)	Plant protection products and biocides ²
	(c)	Unauthorised Antimicrobial substances
	(f) ³	Unauthorised Anti-inflammatory substances, sedatives and any other pharmacologically active substances ³

¹ Each sub-group in Group A must be checked each year using a minimum of 5 % of the total number of samples to be collected for Group A. The competent authority should attribute the remaining samples to each sub-group according to risk, ensuring that the total sample number for all A sub-groups meets or exceeds the minimum required.

² Tested as part of DAFM National randomised surveillance plan for production in the Member States (Plan 2) will be included as part of Plan 1 in 2025.

³ As of 2025 A3f is no longer mandatory for aquaculture ref Commission Delegated Regulation (EU) 2024/2562 of 3 June 2024 amending Delegated Regulation (EU) 2022/1644

Table 5: List of substances groups required to be included in the Aquaculture NRBCP (Plan 1) for Group B Pharmacologically active substances authorised for use in food-producing animals^{1a,1b}

B Pharmacologically active substances listed in Table 1 of the Annex to Regulation (EU) No. 37/2010:		
B1	(a)	Antimicrobial substances ^{2,3}
	(b)	Insecticides, fungicides, anthelmintics and other antiparasitic agents ²
	(c)	Sedatives ⁴
	(d)	Non-steroidal anti-inflammatory drugs (NSAIDs), corticosteroids and glucocorticoids ⁴
	(e) ⁶	Other pharmacologically active substances. ⁶
B2		Coccidiostats and histomonostats authorised ^{4,5}

^{1a} For Group B substances, the selection of specific substances for testing within each substance group is to be decided according to criteria listed in Annex II to Delegated Regulation (EU) 2022/1644.

^{1b} The competent authority should attribute the samples to each sub-group according to risk, ensuring that the total sample number for all B sub-groups meets or exceeds the minimum required.

² Refer to Aquaculture National Risk – based control plan for production for Aquaculture (Plan 1) for details of what subgroups are analysed (Appendix 6).

³ For additional subgroups analysed reference National randomised surveillance plan for production in the Member States (Plan 2) such as aminoglycosides, polypeptides, polymyxin.

⁴ Tested as part of DAFM National randomised surveillance plan for production in the Member States (Plan 2) will be included as part of plan 1 in 2025.

⁵ Authorised according to Union legislation, for which maximum levels and maximum residue limits are set under Union legislation.

⁶ As of 2025 B1e is no longer mandatory for aquaculture ref Commission Delegated Regulation (EU) 2024/2562 of 3rd June 2024 amending Delegated Regulation (EU) 2022/1644.

2.3 Selection of Sample for Group A

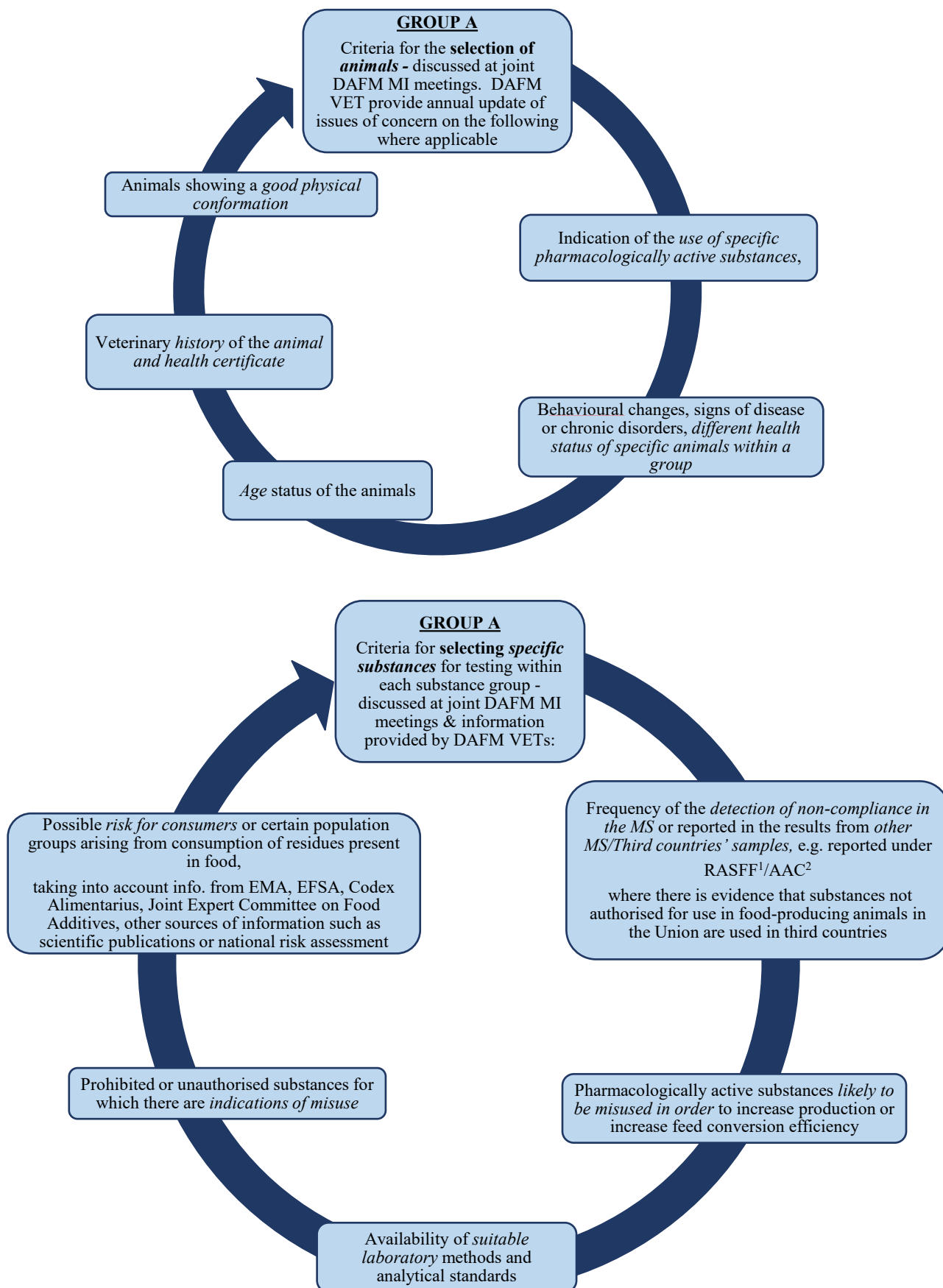


Figure 2: Selection of samples and substances for NRBCP (Plan1) Group A

¹ Rapid Alert System for Food and Feed

² Administrative Assistance and Cooperation System

2.4 Selection of Sample for Group B

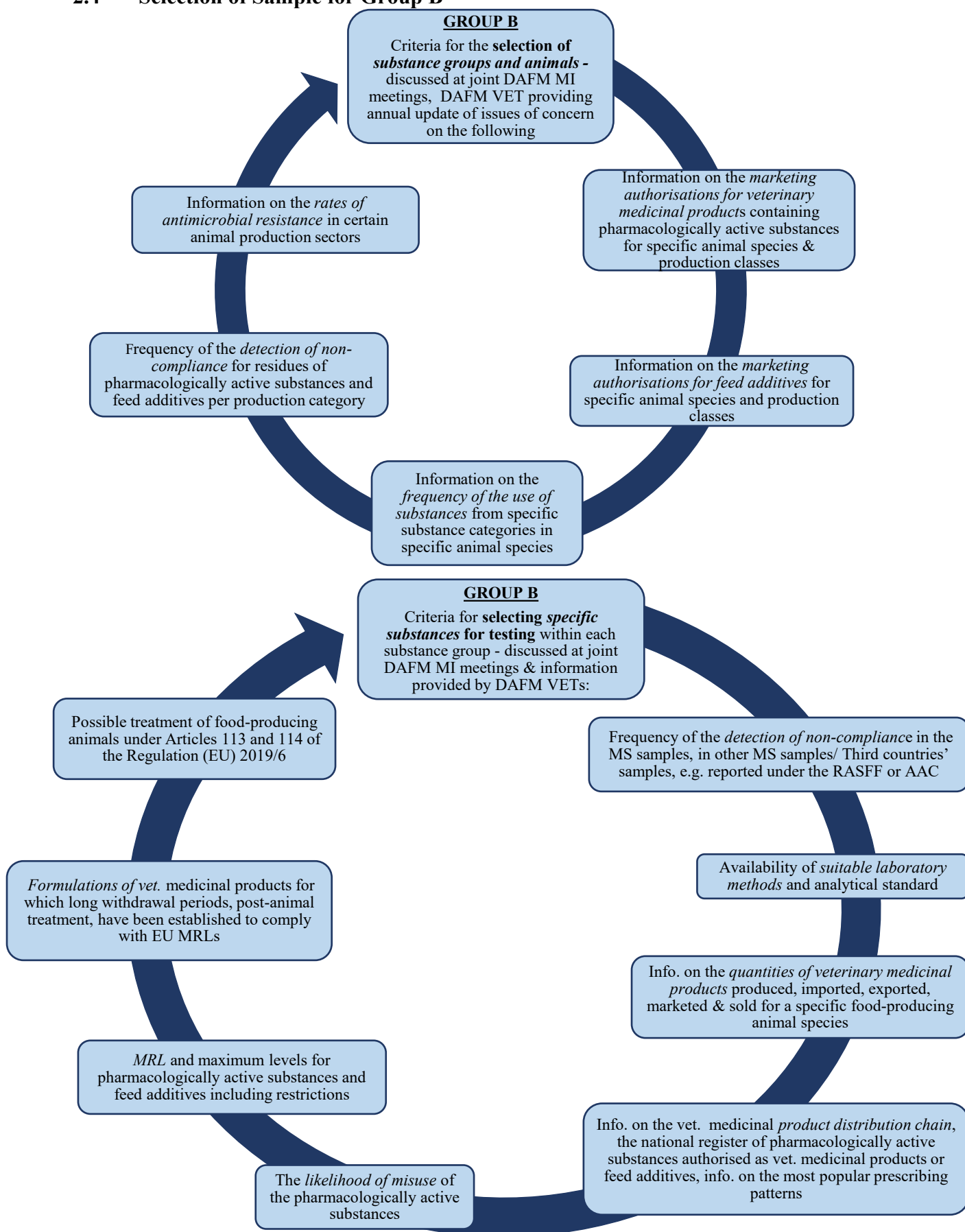


Figure 3: Selection of samples, substances and specific substances for testing for NRBCP (Plan 1) Group B

2.5 Reporting to the EC

Annually, the Marine Institute (MI) reports the NRBCP – Plan 1 results and detailed metadata for Aquaculture (subsequent year) to DAFM who, in turn, report to the EC and European Food Safety Authority (EFSA) in the required EFSA format by 30th June of each year. The complete 2024 aquaculture results were reported to DAFM in the EFSA format in May 2025. This report examines the 2024 residue results for aquaculture in more detail.



3. VETERINARY MEDICINES

All veterinary medicines require prior authorisation from the Health Products Regulatory Authority (HPRA) before being placed on the market in Ireland (www.hpra.ie). Under the direction of DAFM in exceptional circumstances, national and EU legislation [Regulation (EU) 2019/6: Cascade - Articles 112, 113 & 114 and Article 116 of Application to Import Veterinary Medicinal Product] allows for the use of veterinary medicinal products authorised for use in another EU member state excluding Ireland.

For farmed finfish there is a limited number of veterinary medicines used which are primarily antibiotics and sea lice treatment. For the latter, the sea lice management strategy on farms includes the use of husbandry, management practices, prescription-only veterinary medicines and non-medicinal measures to control sea lice infestation. Current management practices are migrating away from veterinary medicines and are moving toward non-medicinal removal of sea lice e.g. biological, mechanical, thermal, and freshwater/hyposaline measures.

(<https://www.marine.ie/sites/default/files/MIFiles/Docs/Aquaculture/IrishFisheriesBulletin56.pdf>)

In 2024, HPRA prescription only veterinary medicines, authorised for use in the control of sea lice in Ireland were Deltamethrin (pyrethroid, AMX, bath treatment¹), Emamectin Benzoate (avermectin, Slice, in-feed treatment²) and the only antibiotic authorised was Oxytetracycline (tetracycline, Maracycline, in-feed treatment²).

¹ Bath treatments use well-boats or tarpaulins/skirts to enclose the salmon net-pens.

² In-feed medicines are incorporated into the diet to get the required dose to the fish.

4. SAMPLING

In 2024, samples were taken in accordance with Commission Delegated Regulation (EU) 2022/1644, Commission Implementing Regulation (EU) 2022/1646 and Annex II of Commission Implementing Regulation (EU) 2021/808 and their amendments by Marine Institute Authorised Sampling Officers* (Authorised under the Veterinary Medicinal Products, medicated Feed and Fertilisers Regulation Act 2023).

The MI ensures that a strict chain of custody is maintained, sampling is unforeseen, unexpected and without prior warning except where such notice is necessary and duly justified in accordance with Official Control Regulation (EU) 2017/625 and Commission Delegated Regulation (EU) 2022/1644, Commission Implementing Regulation (EU) 2022/1646 and Annex II of Commission Implementing Regulation (EU) 2021/808 and its amendment. Samples are taken throughout the year in an effort to spread sampling across different sites and are taken in accordance with the NRBCP (Plan 1). As per Annex I of Implementing Regulation (EU) 2022/1646 it is a requirement to meet a minimum sampling frequency for Group A (Table 6a) and Group B (Table 6b).

Table 6a: Minimum Sampling Frequency Group A

Sampling frequency - Group A substances	
Aquaculture (finfish, crustaceans and other aquaculture products)	Minimum 1 sample per 300 tonnes of annual production of aquaculture for the first 60,000 tonnes of production and then 1 additional sample for each additional 2,000 tonnes

Provision:

1. Controls on each combination of sub-groups of Group A substances and commodity groups as listed in Annex II to Delegated Regulation (EU) 2022/1644 shall be annually performed in minimum 5 % of the samples taken in accordance to the table of this Annex for that commodity group. This minimum percentage does not apply to casings, and it does not apply to group A (3), point (f) for all commodity groups.
2. Within the aquaculture group, samples shall be taken from fresh and seawater aquaculture species, taking into account their relative production volume.
3. When there is a reason to believe that pharmacologically active substances are being applied to the other aquaculture products, then these species must be included in the sampling plan in proportion to their production as additional samples to those taken for finfish farming products.

Table 6b: Minimum Sampling Frequency Group B

Sampling frequency - Group B substances	
Aquaculture (finfish, crustaceans and other aquaculture products)	Minimum 1 sample per 300 tonnes of annual production of aquaculture for the first 60,000 tonnes of production and then 1 additional sample for each additional 2,000 tonnes

Provision:

1. For the Group B substances, the selection of specific substances for testing within each substance group is to be decided according to criteria listed in Annex II to Delegated Regulation (EU) 2022/1644.
2. Within the aquaculture group, samples shall be taken from fresh and seawater aquaculture species, taking into account their relative production volume.
3. When there is a reason to believe that pharmacologically active substances are being applied to the other aquaculture products, then these species must be included in the sampling plan in proportion to their production as additional samples to those taken for finfish farming products.

*In 2025, DAFM Veterinary Inspectors commenced sampling for on farm OSOP samples for NRBCP aquaculture Plan 1

When Aquaculture samples are taken as part of NRBCP – Plan 1 and to comply with the overall plan, sampling needs to comply with Annex II of Delegated Regulation (EU) 2022/1644 as detailed in Appendix 5.

For Aquaculture samples, sampling is carried out as follows:

- Group A samples are taken ‘on farm’ at the smolt stage and at OSOP stage for freshwater samples which is aimed at detection of illegal treatment (prohibited substances Group A). Additional small number of harvest samples are tested to provide further information for assessment of risk-based plans for future years.
- Group B samples are taken at harvest stage which is aimed at controlling the compliance with the Maximum Residue Limits (MRL) and for detection of illegal treatment (prohibited substances Group A). These harvest samples are taken primarily at processing plants for salmon and ‘on farm’ for harvest freshwater trout. In 2024, harvest salmon samples were taken at the following processing plants: MOWI Ireland, Irish Seafood Producers Group Ltd (ISPG), Ocean Farm Ltd for salmon. These processing plants harvest samples from 3 distinct regions where salmon farming is carried out:
 - The Southwest (Counties Cork and Kerry)
 - The West (Counties Mayo and Galway)
 - The Northwest (County Donegal)

Figure 3 provides details of location of active marine fish farm sites in 2024 (note these are active sites therefore not all sites would be harvesting fish in a particular year as sites may not have harvest samples ready for processing plant).

A total of 92 target samples were taken from fish farms and processing plants in 2024 in accordance with the NRBCP – Plan 1 for Aquaculture 2024 (Appendix 6).

- 46 target samples were taken at OSOP: 36 salmon smolts and 10 OSOP freshwater trout (individual fish may be pooled to provide a sample dependent on weight) were collected from 9 farms for Group A (Salmon smolts were collected on 7 occasions and freshwater trout OSOP on 2 occasions.)

- 46 target samples were taken at harvest stage which comprised of 36 farmed salmon and 10 freshwater trout. These harvest samples were collected during 10 sampling events (samples collected from a given site at a given time) throughout the year. Salmon were collected on 7 occasions at processing plants and freshwater trout on 2 occasions at farm level. In 2024, no sea reared trout samples were taken as no active sites. Samples were collected from the same producers on a number of occasions due to the small number of active harvest sites in the given year.

Generally, 5 fish were taken from each producer during a sampling event and each individual fish was treated as a sample. However, where an individual fish was not large enough to provide sufficient test material, a number of fish were pooled to provide a sample. Samples were further subsampled as multiple tests were typically performed on individual samples.

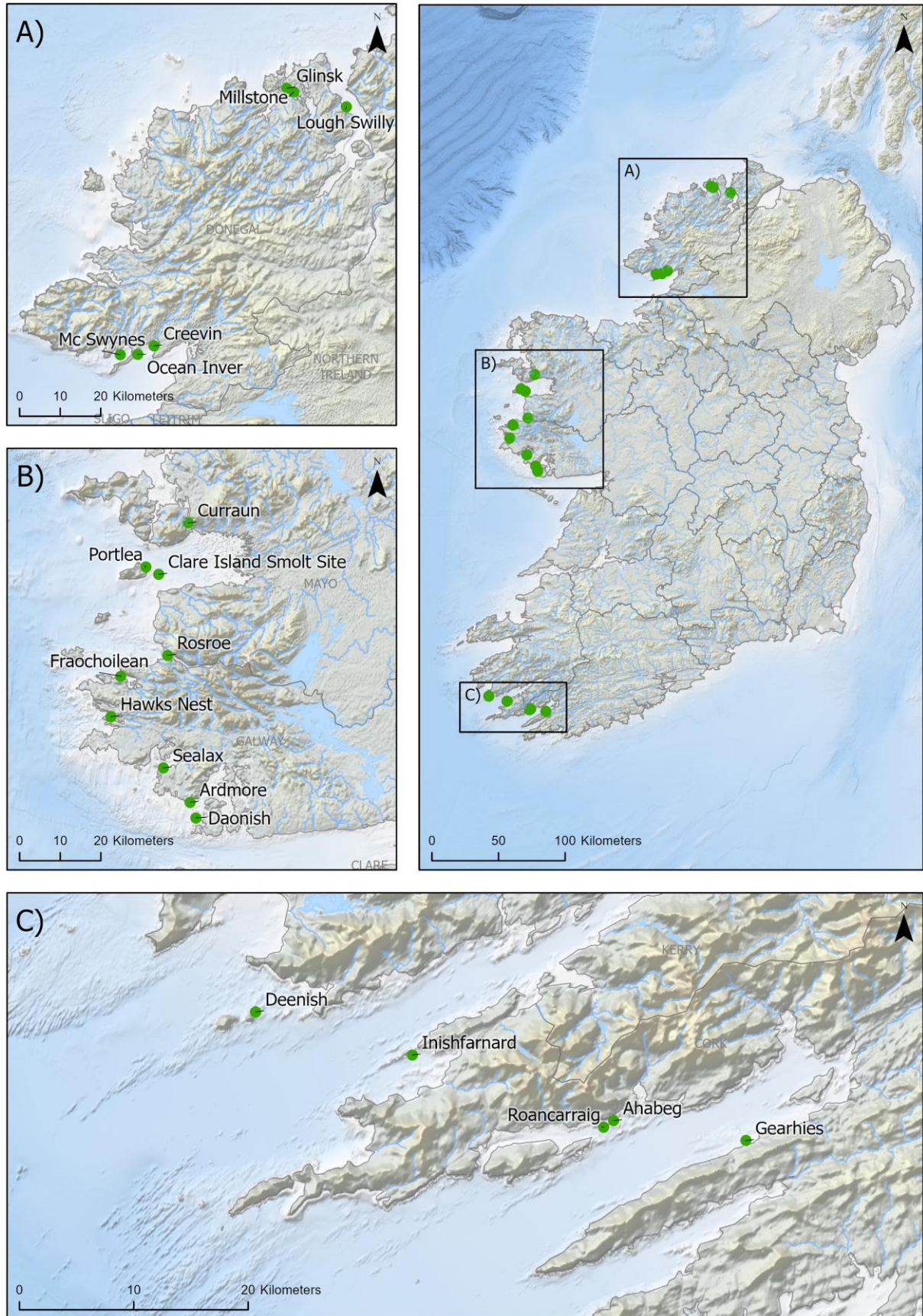


Figure 4: Locations of active marine fish farm sites in 2024.

5. ANALYSIS

The Residue NRBCP - Plan 1 samples are testing with the aim of:

- maximising the possibility of detecting non-compliance with maximum residue limits (MRLs) for veterinary medicinal products in accordance with Table 1 of Commission Regulation (EU) 37/2010.

&

- for detecting the presence of prohibited or unauthorised pharmacologically active substances and residues (Commission Regulation (EU) 2019/1871 for reference points for action (RPA) and Table 2 of Commission Regulation (EU) 37/2010).

Details of the analytical methods and laboratories used are provided in Appendix 4. Certain analytical methods are multi-residue methods and can test for several substances groups in the one method include both group A and group B substance which allows for more samples than the minimum number to be tested for harvest and OSOP samples for certain substances.

The analytical methods performance characteristics, such as Decision Limit (CC_{α}) and Detection Capability (CC_{β}), used to assess the results of the aquaculture NRBCP – Plan 1 are provided in Appendix 1.

Depending on the nature of the analytical method, samples are tested by confirmatory or screening methods. Where a sample is tested by a screening method and a substance is found to be detected above the Detection Capability (CC_{β}) or limit of quantification (LOQ), this sample is sent for confirmatory testing.

6. RESULTS

6.1 Interpretation of Results

Samples are tested by confirmatory method only or by screening method with subsequent confirmatory method if required.

Where a sample is tested by a screening method and a substance is found to be detected above the Detection Capability (CC_{β}) this sample is sent for confirmatory testing. It is the confirmatory result which will determine if this sample is compliant or non-compliant, where a non-compliant sample is a result above Decision Limit (CC_{α}).

Follow up action is taken on confirmed non-compliant sample where a substance is found to be above the Decision Limits (action level) as detailed below:

- **Where a Maximum Residue Limit (MRL) has been set**, samples are deemed non-compliant (i.e. positive) if concentrations of a given residue are confirmed to be in excess of the MRL and above the Decision Limit (action level).

A compliant result is less than the Decision Limit (CC_{α}) for confirmatory method or less than the Detection Capability/Limit of Quantification (LOQ) for screening method (CC_{β}).

- **Where no MRL is set**, e.g. compounds listed in Commission Regulation (EU) No. 37/2010 (Table 2) or prohibited or unauthorised substances listed in Commission Regulation (EU) 2019/1871, a Decision Limit (action level) is used. Samples are deemed non-compliant if concentrations of a given residue are confirmed to be in excess of the Decision limit (action level).

A compliant result is less than the Decision Limit.

A comprehensive quality assurance programme supports the monitoring programme and is detailed in Appendix 2 and 3.

6.2 Breakdown of 2024 Results

In 2024, in excess of 1,982 tests and a total of 12,882 measurements were carried out on 92 target samples of farmed finfish muscle and skin in natural proportion. **All 2024 samples were compliant for all parameters tested.**

Table 7: Summary of 2024 residue monitoring results for target farmed fish samples (salmon and trout).

RESIDUES (Group and Lab Name)	Method Code	NUMBER TESTED ^{2,3}	NON- COMPLIANT ¹
Group A – Substances having an anabolic effect			
A1a Stilbenes - CER ⁴	ANA30	55	0
A1c Steroids - CER	ANA30	55	0
A1d Resorcylic acid lactones, including zeranol - CER ⁴	ANA30	55	0
A2a Chloramphenicol - CER	ANA99G	76	0
A2b Nitrofurans - CER	ANA85	55	0
A2c Nitroimidazoles -CER	ANA90	55	0
A2d Dapsone - MI	CHE-220	92	0
A3a Dyes - MI	CHE-233	64	0
A3c Antimicrobial substances - MI	CHE-220	92	0
A3c Antimicrobial substances - CER	ANA99G	76	0
A3d Coccidiostats, histomonostats & other antiparasitic agents - CER ⁴	ANA98	46	0
Group B - Veterinary drugs and contaminants			
B1a Tetracyclines - MI	CHE-220	92	0
B1a Quinolones - MI	CHE-220	92	0
B1a Sulphonamides - MI	CHE-220	92	0
B1a Other antimicrobial substances (trimethoprim) - MI	CHE-220	92	0
B1a Phenicols - CER	ANA99G	76	0
B1a Beta-Lactams: Penicillins - CER	ANA99G	76	0
B1a Beta-Lactams: Cephalosporin - CER	ANA99G	76	0
B1a Macrolides - CER	ANA99G	76	0
B1a Lincosamides - CER	ANA99G	76	0
B1a Other antimicrobial substances - CER	ANA99G	76	0
B1b Benzoylurea & Acyl-Urea Derivatives - CER	ANA98	46	0
B1b Avermectins - CER	ANA98	46	0
B1b Benzimidazoles - CER	ANA98	46	0
B1b Other antiparasitic - CER	ANA98	46	0
B1b Pyrantel - CER	ANA99G	76	0
B1b Pyrethroids - MI	CHE-215	46	0
B1d Corticosteroids - CER	ANA30	55	0
B2 Amprolium - CER	ANA99G	76	0

¹ Action limits to evaluate non-compliant results reference Appendix 1, Detection Limit Reference Appendix 6.

² Multi-residue method tests for several substances groups in the one method include both group A and group B substance which allows for more samples than the min number to be tested for harvest and OSOP samples for certain substances.

³ Additional harvest samples were tested for Group A to provide data for future plans.

⁴ A1a, A1d and A3d not mandatory to test in aquaculture, CER multiresidue methods includes the testing of these analytes.

6.2.1 Group A – Prohibited or unauthorised pharmacologically active substances

92 samples (other stage of production and harvest) were tested for at least one Group A compound. Group A are prohibited or unauthorised **pharmacologically active substances in food-producing animals** and these compounds should **not** be present as no safe limit can be set for their residue e.g. dyes, steroids, chloramphenicol, nitrofurans, nitroimidazoles, dapsone, unauthorised antimicrobial substances. For the purpose of control in food of animal origin of some residues of substances, whose use is prohibited or not allowed in the Union, the reference points for action, laid down in the Annex of Commission Regulation (EU) 2019/1871*, shall apply irrespective of the food matrix tested.

Table 8: Reference Points for Action (RPA)- Commission Regulation (EU) 2019/1871

Substance	RPA (ug/kg)	Other Provisions
Chloramphenicol	0.15	
Malachite green	0.5	0.5 µg/kg for the sum of malachite green and leucomalachite green
Nitrofurans and their metabolites	0.5 ¹	0.5 µg/kg for each of the metabolites of furazolidone (AOZ or 3-amino-2-oxazolidinone), furaltadone (AMAZ or 3-amino-5-methylmorpholino-2-oxazolidinone), nitrofurantoin (AHD or 1-aminohydantoin), nitrofurazone (SEM or semicarbazide) and nifursol (DNSH or 3,5-dinitrosalicylic acid hydrazide)

¹ Due to the natural occurrence of SEM in crayfish at levels above the RPA, only levels of AOZ, AMAZ, AHD and DNSH above the RPA are a clear indication of the illegal use of nitrofurans and their metabolites. The RPA of 0.5 µg/kg for SEM in crayfish shall only be applied when the illegal use of nitrofurazone or SEM on crayfish has been established, i.e. at least one of the other nitrofurans metabolites has been detected.

Group A1c Steroids & additional A1a Stilbenes, A1d Zeranols

For Group A1c substances, 55 individual samples were tested by external provider CER laboratory by LC-MS-MS method (ANA 30) which tested the following steroids in Table 9a. **No non-compliant (i.e. no positive) results were reported for Group A1c compounds.**

In addition to steroids, this CER method (ANA30) tested A1a stilbenes and A1d zeranol as listed in Table 9b. A1a stilbenes and A1d zeranol are not mandatory groups to be tested for aquaculture. All results were below the decision limit as detailed in Appendix 1.

Table 9a: A1c Steroids

Steroids	
17alpha Nandrolone	Megestrol 17-acetate
17alpha Boldenone	Melengestrol 17-acetate
Acetoxy-Progesterone	Methyltestosterone
Boldenone	19-Nortestosterone / Nandrolone
Caproxyprogesterone	Norethandrolon
Chlormadinone acetate	Norgestrel
Clostebol acetate	Trenbolone 17-acetate
Methyl-Boldenone (Dianabol)	Trenbolone (Beta)
Medroxyprogesterone 17-acetate	Ethinylestradiol

*Commission Regulation (EU) 2024/285 of 12 November 2024 amending Regulation (EU) 2019/1871

Table 9b: A1a Stilbenes and A1d Zeranols

Stilbenes
Dienestrol Diethylstilbestrol (Stilbestrol) Hexestrol
Zeranols
Alpha-Zearalanol (Zeranol) Beta Zearalanol (Taleranol)

Group A2a: Chloramphenicol

76 individual samples were tested for **Chloramphenicol** by external provider CER laboratory by LC-MS-MS method (ANA 99G). Chloramphenicol is not allowed to be used in food producing animal species as it was not possible to establish a MRL in accordance with Commission Regulation 37/2010 and is listed in Table 2 of Commission Regulation 37/2010 as prohibited substance. A Reference Point for action (RPA) of 0.15 µg kg⁻¹ for Chloramphenicol applied from 28th November 2022 as per Commission Regulation (EU) 2019/1871. **No non-compliant (i.e. no positive) results were reported for Group A2a compounds.**

Group A2b: Nitrofurans

For A2b nitrofurans, 55 samples were analysed by external provider CER Groupe Laboratory for the marker metabolites of the nitrofurans: furazolidone, furaltadone, nitrofurantoin and nitrofurazone using a quantitative (LCMSMS) method (ANA 85). Nitrofurans are not allowed to be used in food producing animal species as it was not possible to establish a MRL in accordance with Commission Regulation 37/2010 and is listed in Table 2 of Commission Regulation 37/2010 as prohibited substances. A Reference Point for action (RPA) of 0.5 µg kg⁻¹ for Nitrofurans and their metabolites applied from 28th November 2022 as per Commission Regulation (EU) 2019/1871. **No non-compliant (i.e. no positive) results were reported for Group A2a compounds.**

Table 10: A2b Nitrofurans

Nitrofurans
1-aminohydantoin hydrochloride (AHD) 3-amino-5-methylmorpholino-2-oxazolidinone (AMOZ) 3-amino-2-oxazolidinone (AOZ) 2-Hydroxy-3,5-dinitrobenzohydrazid (DSH) Semicarbazide hydrochloride (SEM)

Group A2c: Nitroimidazoles

For nitroimidazoles which are classed as a Group A2c, 55 samples were analysed by external provider CER Groupe Laboratory for nitroimidazoles and its metabolites¹ by a quantitative (LCMSMS) method (ANA 90). Nitroimidazoles are not allowed to be used in food producing animal species as it was not possible to establish a MRL in accordance with Commission Regulation 37/2010 and is listed in Table 2 of Commission Regulation 37/2010 as prohibited substances. **No non-compliant (i.e. no positive) results were reported for Group A2b compounds.**

Table 11: A2b Nitroimidazoles

Nitroimidazoles	
Dimetridazole	Ipronidazole
Metronidazole	IPZOH
Ronidazole	Ornidazole
Carnidazole	Secnidazole
HMMNI	Ternidazole
Hydroxymetronidazole	Tinidazole

Group A2d: Other substances (Dapsone)

For Dapsone which is classed as A2d other substance, 92 individual samples were tested by the Marine Institute LC-MS-MS method (CHE-220). Dapsone is not allowed to be used in food producing animal species as it was not possible to establish a MRL in accordance with Commission Regulation 37/2010 and is listed in Table 2 of Commission Regulation 37/2010 as prohibited substance. **No non-compliant (i.e. no positive) results were reported for Group A2d compounds.**

Group A3a: Dyes

Dyes which are classified as Group A3a are analysed by the Marine Institute LC-MS-MS method (CHE-233) for the following triphenylmethane dyes in Table 12. These dyes could be used illegally in aquaculture as they exhibit antimicrobial and antiparasitic properties. Malachite green is a common commercial fabric dye which had been widely used both prophylactically and in the treatment of fungal infection of both fish and eggs for over 60 years. It is also effective against several protozoal infestations, including agents causing proliferative kidney disease (PKD) and ichthyophthiriosis (white dot disease). Its use had been primarily associated with freshwater farms and hatcheries; therefore,

¹ The following nitroimidazole metabolites are listed on the NRCP-dimetridazol, ronidazol, metronidazol, hydroxyl-dimetridazol, hydroxyl-metronidazol

freshwater sites are particularly targeted by the NRCP. Malachite green is possibly both carcinogenic and genotoxic (i.e. damaging to DNA).

Table 12: A3a Dyes

Dyes	
Brilliant Green	Malachite Green
Crystal Violet	Victoria Blue
Leuco Crystal Violet	Sum of Malachite Green and Leuco malachite Green
Leuco Malachite Green	Sum of Crystal Violet and Leuco Crystal Violet

A Reference Point for action (RPA) of $0.5 \mu\text{g kg}^{-1}$ for the sum of Malachite green and leuco malachite green applied from 28th November 2022 as per Commission Regulation (EU) 2019/1871. The MI validated dyes method complies with this legislation and detects below the RPA. All 64 samples were tested by this method and **were all compliant**.

There has been no evidence of brilliant green, crystal violet, leuco crystal violet, victoria blue being used in aquaculture in Ireland; however, these dyes have the potential to be used to treat Saprolegnia (fungus) either when present on the fish or as a prophylactic treatment to protect fish eggs from infection. No RPA has been set for brilliant green, crystal violet, leuco crystal violet, victoria blue. However, for certain dyes for which no RPA has been set a minimum method performance requirement (MMPR) of $0.5 \mu\text{g kg}^{-1}$ has been set for brilliant green, crystal violet and leuco crystal violet. No MMPR set for Victoria blue.

All 64 target samples (i.e. 18 harvest and 46 other stage of production) tested for malachite green and its metabolite leuco malachite green, crystal violet and its metabolite, brilliant green and victoria blue. No non-compliant (i.e. no positive) results were reported

Group A3c: Antimicrobial substances

Certain antimicrobials are classified as unauthorised (i.e. Nalidixic Acid, Norfloxacin and Demeclacycline) and are not allowed to be used in food producing animal species as it was not possible to establish an MRL. Nalidixic Acid, Norfloxacin and Demeclacycline were tested in 92 individual samples by the Marine Institute LC-MS-MS method (CHE-220), and **no non-compliant (i.e. no positive) results were reported for Group A3c compounds**.

In addition, CER tested 76 samples for unauthorised antimicrobials as listed in Table 13 by their LCMS method (ANA 99G) and all samples were report below the Decision limit of the method as detailed in Appendix 1.

Table 13: A3c Antimicrobial substances tested by CER

Antimicrobial substances
Carbadox
Cinoxacin
Clarithromycine
MQCA (metabolite Olaquinox)
Ofloxacin
Olaquinox
Oleandomycine
Ormetoprim
QCA (metabolite carbadox)

Group A3d: Coccidiostats, histomonostats and other antiparasitic agents

A3d are not a mandatory requirement to be tested for aquaculture, however CER multiresidue method (ANA 98) includes testing of the following A3d anthelmintics as detailed in Table 14 for 46 samples as part of the multiresidue method for Group B1b. All results were below the decision limit as detailed in Appendix 1.

Table 14: A3d Coccidiostats, histomonostats and other antiparasitic agents

Antimicrobial substances
Cambendazole
Nemadectin
Parbendazole

6.2.2 Group B – Pharmacologically active substances

A total of 92 samples of farmed finfish were tested for Group B compounds which can be classed as authorised **pharmacologically active substances for use in food-producing animals** and these medicines should be below maximum residue limit (MRL) in accordance with Commission Regulation 37/2010 Table 1. **No non-compliant (i.e. no positive) results were reported for Group B compounds as detailed below for Group B1a (Antimicrobial substances) Group B1b (Insecticides, fungicides, anthelmintics and other antiparasitic agents) and Group B1d (NSAIDs, corticosteroids and glucocorticoids) and B2 Coccidiostats and histomonostats authorised.**

Group B1a: Antimicrobial substances

- **Group B1a: Tetracyclines**

92 individual samples were analysed by the Marine Institute by LC-MS-MS method (CHE-220) for below Group B1a substances in Table 15. This method tests for several tetracyclines including Oxytetracycline which was the only antibiotic in 2024 that the HPRA authorised. **No non-compliant (i.e. no positive) results were obtained for tetracyclines.**

Table 15: B1a Tetracycline

Tetracyclines	
Doxycycline	Tetracycline
Chlortetracycline	epi Tetracycline
epi Chlortetracycline	Sum of Chlortetracycline and its 4-epimer
Oxytetracycline	Sum of Oxytetracycline and its 4-epimer
epi Oxytetracycline	Sum of Tetracycline and its 4-epimer

- **Group B1a: Sulphonamides**

92 individual samples were analysed by the Marine Institute by LC-MS-MS (CHE-220) method for below Group B1a substances in Table 16 and **no non-compliant (i.e. no positive) results were obtained for sulphonamides.**

Table 16: B1a Sulphonamides

Sulphonamides	
Sulfabenzamide	Sulfamethoxazole
Sulfacetamide	Sulfamethoxy pyridazine
Sulfachloropyrazine Sodium	Sulfamonomethoxine
Sulfachloropyridazine	Sulfamoxole
Sulfadiazine	Sulfaphenazole
Sulfadimethoxine	Sulfapyridine
Sulfadoxine	Sulfaquinoxaline
Sulfaethoxy pyrdazine	Sulfasalazine
Sulfaguanidine	Sulfathiazole
Sulfamerazine	Sulfatroxazole
Sulfameter	Sulfisomidine
Sulfamethazine	Sulfisoxazole
Sulfamethizole	Sum of Trimethoprim & Sulphonamides

- **Group B1a: Quinolones and Trimethoprim**

92 individual samples were analysed by the Marine Institute by LC-MS-MS (CHE-220) method for below Group B1a substances in Table 17 and **no non-compliant (i.e. no positive) results were obtained for quinolones and trimethoprim.**

Table 17: B1a Quinolones and Trimethoprim

Quinolones	
Danofloxacin	Sarafloxacin
Difloxacin	Ciprofloxacin
Flumequine	Enrofloxacin
Marbofloxacin	Sum of Enrofloxacin and Ciprofloxacin
Oxolinic acid	Trimethoprim

- **Group B1a: Phenicols, Beta-Lactams: Penicillins and Cephalisporin, Macrolides and Lincosamides**

76 individual samples were analysed by external provider CER Groupe Laboratory by LC-MS-MS method (ANA 99G) for below Group B1a substances in Table 18 and **no non-compliant (i.e. no positive) results were obtained for phenicols, beta-lactams: penicillins and cephalisporin, macrolides and lincosamides.** All results were below the decision limit as detailed in Appendix 1.

Table 18: B1a Phenicols, Beta-Lactams: Penicillins and Cephalisporin, Macrolides and Lincosamides

Phenicols	Macrolides
Florfenicol Thiamphenicol	Erythromycin (Erythromycin A) Gamithromycin Neospiramycin
Beta-Lactams: Penicillins	
Amoxicillin Ampicillin Cloxacillin Dicloxacillin Nafcillin Oxacillin	Spiramycin Tildipirosin Tilmicosin Tylosin A Tylvalosin (Acetylisovaleryltirosin, Aivlosin)
Penicillin G (Benzylpenicillin) Penicillin V (Phenoxymethylpenicillin)	Lincosamides
	Lincomycin Pirlimycin
Beta-Lactams: Cephalisporin	Other
Cefalexin Cefalonium Cefapirin Cefazolin Cefoperazone Cefquinome Ceftiofur	Desfuroylceftiofur (DCF) Desfuroylceftiofur cysteine disulfide (DCCD) Bacitracin A Tiamulin Valnemulin

Group B1b: Insecticides, fungicides, anthelmintics and other antiparasitic agents

- **Benzoylurea & Acyl-Urea, Avermectins, benzimidazoles, salicylicanilides & other B1bs**

46 harvest samples were analysed by the external provider CER Groupe Laboratory using UPLC-MS/MS (ANA 98) for the below Group B1b substances in Table 19. **No non-compliant results were obtained.** All results were below the decision limit as detailed in Appendix 1.

Table 19: Benzoylurea & Acyl-Urea, Avermectins, benzimidazoles, Salicylicanilides & Other B1bs

Benzoylurea & Acyl-Urea Derivatives	Benzimidazoles
Diflubenzuron	2-Aminoflubendazole
Fluazuron	5-Hydroxythiabendazole
Hexaflumuron	Albendazol-2-aminosulfone
Lufenurone	Albendazole
Teflubenzuron	Albendazole sulphone
Avermectins	Albendazole sulphoxide
Abamectin	Aminomebendazole
Doramectin	Cyclopentyl albendazole sulfoxide
Emamectin B1a	Febantel
Eprinomectin	Fenbendazole
Ivermectin	Flubendazole
Moxidectin	Hydroxymebendazole
Salicylicanilides	Ketotriclabendazole
Closantel	Mebendazole
Oxyclozanide	Oxfendazole
Rafoxanide	Oxfendazole sulphone
Others	Oxibendazole
Clorsulon	Hydroxyflubendazole
Levamisole	Thiabendazole
Monepantel sulfone	Triclabendazole
Nitroxinil	Triclabendazole sulfone
Praziquantel	Triclabenzole sulfoxide

In addition, CER method ANA 99G, also tested for the below **B2** and **B1b** compounds in Table 20 and all 76 samples were found to be below the decision limit as detailed in Appendix 1.

Table 20: B1b and B2 compounds tested under ANA 99G

B1b and B2 compounds
Amprolium
Pyrantel

- **Pyrethroids**

46 harvest samples were analysed by the Marine Institute CHE-215 by using a GC-MS screening method for the below Group B1b pyrethroid substance in Table 21. This method includes testing for Deltamethrin, which was an authorised sea lice treatment in 2024 by the HPRA. **No non-compliant results were obtained for pyrethroids.**

Table 21: Pyrethroids

Pyrethroids
Cypermethrin (sum of isomers)
Deltamethrin (cis-deltamethrin)

Group B1d: NSAIDs, corticosteroids and glucocorticoids

In addition, CER method ANA 30, also tested for the below B1d compounds in Table 22 and all 55 samples were found to be below the decision limit as detailed in Appendix 1.

Table 22: Corticosteroids

Corticosteroids
Flugestone-17-Acetate
Delmadinone acetate

PART B

Summary Report on 2024 Border Control Posts Product Testing undertaken at the Marine Institute

Carried out under Commission Regulation 2019/2130 establishing detailed rules on the operations to be carried out during and after documentary checks, identity checks and physical checks on animals and goods subject to official controls at border control posts

*Commission Regulation (EC) No 2017/625¹,
Commission Delegated Regulation (EU) 2022/1644²,
Commission Implementing Regulation (EU) 2022/1646³
& Commission Implementing Regulation (EU) 2019/187 (IOC)*

Third Countries (Non-EU) wishing to export animal products to the EU are required to satisfy the European Commission that their residue monitoring measures provide equivalent guarantees for EU consumers similar to EU residue control under NRBCP – Plan 1. Therefore, food imports of animal origin from a Third Country may only be brought into the European Community through a Border Control Post (BCP) that has been approved for importation. In Ireland, the responsibility for carrying out checks at the BCP (Dublin Port, Rosslare Port and Dublin Airport) is with the DAFM BCP Officers.

In 2024, BCP samples were collected by DAFM Sampling Officers and samples for testing of antibacterial (B1a), and dyes (A3a) were sent to the Marine Institute for testing in accordance with 2024 BCP plan (Appendix 7 and Appendix 8) in accordance with NRBCP – Plan 1 for third country imports. In total 13 random samples were sent to the Institute by the DAFM Sampling Officers at Dublin Port and Dublin Airport, the 2024 BCP results as tested at the Marine Institute are presented in Table 23. **9 random samples were tested by the Institute and reported as compliant for antibiotics (reference Table 23). In addition, 4 random samples were tested by external provider CER and reported as compliant for dyes (reference Table 24).**

In addition, Safeguard samples are analysed under Commission Implementing Decision (EU) 2016/1774 amending Commission Decision 2010/381/EU ‘on emergency measures applicable to consignments of aquaculture products imported from India and intended for human consumption’. 11 Safeguard samples for tetracycline analysis were received from DAFM, . This testing requires a rapid turnaround time as consignments are held pending the compliant result. Results are presented in Table 25 and were analysed by external provider CER. **All 11 safeguard samples were reported as compliant.**

In addition, 1 sample was received as a suspect sample in accordance with Commission Implementing Regulation (EU) 2019/1873 which required to be tested for tetracyclines (reference Table 26). **The suspect sample was reported as compliant.**

¹ Commission Delegated Regulation (EU) 2019/478 of 14 January 2019 amending Regulation (EU) 2017/625.

² Commission Delegated Regulation (EU) 2024/2562 of 3 June 2024 amending Delegated Regulation (EU) 2022/1644.

³ Commission Delegated Regulation (EU) 2024/2563 of 24 September 2024 amending Delegated Regulation (EU) 2022/1646

Table 23: 2024 Border Control Posts samples analysed at Marine Institute

MI CODE	DAFM Code	BCP Office	Product Type	Substances for Identification	Result
RESBCP2024/5003	VN DL623 3317	Dublin Port	Cooked prawn	Antibiotics	Compliant
RESBCP2024/5007	583353	Dublin Port	Shrimp	Antibiotics	Compliant
RESBCP2024/5008	AFIT 607437	Dublin Airport	Piaractus	Antibiotics	Compliant
RESBCP2024/5010	612442	Dublin Port	Shrimp	Antibiotics	Compliant
RESBCP2024/5015	651810	Dublin Port	Frozen fish	Antibiotics	Compliant
RESBCP2024/5017	640216	Dublin Port	Frozen shrimp	Antibiotics	Complaint
RESBCP2024/5018	653248	Dublin Port	Frozen shrimp	Antibiotics	Compliant
RESBCP2024/5020	650973	Dublin Port	Frozen fish	Antibiotics	Compliant
RESBCP2024/5021	651699	Dublin Port	Frozen shrimp	Antibiotics	Compliant

Table 24: 2024 Border Control Posts samples analysed by external provider CER

MI CODE	DAFM Code	BCP Office	Product Type	Substances for Identification	Result
RESBCP2024/5002	VN DL623 3317	Dublin Port	Cooked prawn	Dyes	Compliant
RESBCP2024/5006	583353	Dublin Port	Shrimp	Dyes	Compliant
RESBCP2024/5014	631195	Dublin Port	Prawns	Dyes	Compliant
RESBCP2024/5023	DPP2024/3074	Dublin Port	Frozen raw shrimp	Dyes	Compliant

Table 25: 2024 Safeguard samples - analysed by external provider CER

MI CODE	BIP Ref No.	BIP Office	Product Type	Substances for Identification	Result
RESBCP2024/5004	AFIT 566379	Dublin Port	Prawns	Tetracyclines	Compliant
RESBCP2024/5005	573457	Dublin Port	Shrimp	Tetracyclines	Compliant
RESBCP2024/5009	LOT AAPL/FF/105	Dublin Port	Prawns	Tetracyclines	Compliant
RESBCP2024/5011	BIP003	Dublin Port	Prawns	Tetracyclines	Compliant
RESBCP2024/5012	621244	Dublin Port	Prawns	Tetracyclines	Compliant
RESBCP2024/5013	637809	Dublin Port	Prawns	Tetracyclines	Compliant
RESBCP2024/5016	647708	Dublin Port	Frozen battered prawn	Tetracyclines	Compliant
RESBCP2024/5019	AFIT 637319	Dublin Port	Frozen Prawns	Tetracyclines	Compliant
RESBCP2024/5022	685972	Dublin Port	Frozen Shrimp	Tetracyclines	Compliant
RESBCP2024/5024	2024/2747	Dublin Port	Prawns	Tetracyclines	Compliant
RESBCP2024/5025	3372489	Dublin Port	Breaded Prawns	Tetracyclines	Compliant

Table 26: 2024 Suspect samples - analysed by external provider CER

MI CODE	BIP Ref No.	BIP Office	Product Type	Substances for Identification	Result
RESBCP2024/5001	VPH_CGI0001391	Dublin Port	Frozen prawns	Tetracyclines	Compliant

Appendix 1: Decision Limits and Detection Capability used for assessing the results for 2024

Group A2d, A3c and B1a (MI CHE-220): Analysis of Antibiotics by LCMSMS	Decision Limit CC_{alpha} (µg/kg)
Tetracyclines	
Chlortetracycline	117
Demeclocycline	118
Doxycycline	117
epi-chlortetracycline	117
epi-oxytetracycline	119
epi-tetracycline	121
Oxytetracycline	119
Tetracycline	121
Sum of Chlortetracycline and its 4-epimer	117
Sum of Oxytetracycline and its 4-epimer	119
Sum of tetracycline and its 4-epimer	121
Quinolones	
Ciprofloxacin	110
Danofloxacin	113
Difloxacin	338
Enrofloxacin	110
Flumequine	666
Marbofloxacin	109
Naladixic acid	107
Norfloxacin	110
Oxolinic Acid	111
Sarafloxacin	34
Sum of Enrofloxacin and Ciprofloxacin	110
Sulphonamides	
Sulfabenzamide	109
Sulfacetamide	114
Sulfachloropyrazine sodium	113
Sulfachloropyridazine	109
Sulfadiazine	110
Sulfadimethoxine	109
Sulfadoxine	109
Sulfaethoxypyridazine	109
Sulfaguanidine	129
Sulfamerazine	111
Sulfameter	114
Sulfamethazine	114
Sulfamethizol57e	109
Sulfamethoxazole	110
Sulfamethoxypyridazine	115
Sulfamonomethoxine	111
Sulfamoxole	112
Sulfaphenazole	110
Sulfapyridine	112
Sulfaquinoxaline	109
Sulfasalazine	110
Sulfathiazole	113
Sulfatroxazole	112
Sulfisomidine	115
Sulfisoxazole	110
Sum of Trimethoprim & Sulphonimides	129

A2d: Other A2 substances

A3c: Antimicrobials substances

B1a: Antimicrobials substances

Group A2d, A3c and B1a (MI CHE-220):	Decision Limit
<i>Analysis of Antibiotics by LCMSMS</i>	CC_{alpha} (µg/kg)
Other	
Trimethoprim	57
Dapsone	0.6

A2d: Other A2 substances.

A3c: Antimicrobials substances

B1a: Antimicrobials substances.

Group A3a (MI CHE-233):	Decision Limit
<i>Analysis of Dyes by Thermo LCMSMS</i>	CC_{alpha} (µg/kg)
Brilliant Green	0.26
Crystal Violet	0.26
Leuco Crystal Violet	0.25
Leuco Malachite Green	0.23
Malachite Green	0.28
Victoria Blue	0.27
Sum of Malachite Green and Leucomalachite Green	0.28
Sum of Crystal Violet and Leuco Crystal Violet	0.26

A3a: Dyes.

Group B1b (MI CHE-215):	Detection Capability
<i>Cypermethrin and Deltamethrin Analysis by GCMSMS</i>	CC_{beta} (µg/kg)
Cypermethrin (sum of isomers)	25
Deltamethrin (cis-deltamethrin)	5

B1b: Insecticides, fungicides, anthelmintics and other antiparasitic agents.

Group A2b (CER ANA85):	Decision Limit
<i>Analysis of Nitrofurans by LC-MS/MS</i>	CC_{alpha} (µg/kg)
AHD (1-aminohydantoin hydrochloride)	0.43
AMAZ (3-amino-5-methylmorpholino-2-oxazolidinone)	0.09
AOZ (3-amino-2-oxazolidinone)	0.09
DSH (2-Hydroxy-3,5-dinitrobenzohydrazid)	0.09
SEM (Semicarbazide hydrochloride)	0.09

A2b: Nitrofurans.

Group A2c (CER ANA90):	Decision Limit
<i>Analysis of Nitroimidazoles by LC-MS/MS</i>	CC_{alpha} (µg/kg)
Carnidazole	0.08
Dimetridazole	0.45
HMMNI	0.81
Ipronidazole	0.09
Ipronidazole-OH	0.08
Metronidazole	0.09
Metronidazole-OH	0.86
Ornidazole	0.08
Ronidazol	0.85
Secnidazole	0.08
Ternidazole	0.08
Tinidazole	0.08

A2c: Nitroimidazoles.

Group A3d and B1b (CER ANA98): <i>Analysis of Benzoylurea & Acyl-Urea, Avermectins, Benzimidazoles, Salicylicanilides & Other B1b by UHPLC-MS/MS</i>	Decision Limit CC_{alpha} (µg/kg)
Cambendazole	2.9
Nemadectin	3.76
Parbendazole	2.7
Abamectin	21.6
Doramectin	46
Emamectin B1a	112
Eprinomectin	54.7
Ivermectin	36.3
Moxidectin	54.8
2-Aminoflubendazole	26.2
5-Hydroxythiabendazole	51.5
Albendazol-2-aminosulfone	51.2
Albendazole	10.2
Albendazole Sulphone	10.5
Albendazole Sulphoxide	52.3
Aminomebendazole	32.09
Cyclopentyl albendazole sulfoxide	2.7
Febantel	5.07
Fenbendazole	5.4
Flubendazole	5.2
Hydroxyflubendazole	2.8
Hydroxymebendazole	32.6
Ketotriclabendazole	119
Mebendazole	33
Oxfendazole	5.3
Oxfendazole Sulphone	5.2
Oxibendazole	53.2
Thiabendazole	51.1
Triclabendazole	23.2
Triclabendazole sulfone	25.45
Triclabenzole sulfoxide	24.4
Diflubenzuron	10.3
Fluazuron	262
Hexaflumuron	596
Lufenurone	1475
Teflubenzuron	525
Clorsulon	21
Levamisole	5.6
Monepantel sulfone	157
Nitroxinil	211
Praziquantel	2.6
Closantel	113.1
Oxyclozanide	10.6
Rafoxanide	3.5

A3d: Coccidiostats, histomonostats and other antiparasitic agents)

B1b: Insecticides, fungicides, anthelmintics and other antiparasitic agents.

Group A2a, A3c, B1a, B1b and B2 (CER ANA99G):	Detection Capability
<i>A2a Chloramphenicol, A3c Unauthorised Antimicrobials; B1a: Phenicols, Beta-Lactams: Penicillins, Beta-Lactams: Cephalosporin, Macrolides, Lincosamides, B1b Pyrantel and B2 Coccidiostats by UHPLC-MS/MS</i>	CC_{beta} (µg/kg)
Chloramphenicol	0.15
Carbadox	50
Cinoxacin	2.5
Clarithromycine	2.5
MQCA (metabolite Olaquinox)	5
Ofloxacin	5
Olaquinox	50
Oleandomycine	2.5
Ormetoprim	2.5
QCA (metabolite carbadox)	5
Cefalexin	100
Cefalonium	50
Cefapirin	25
Cefazolin	25
Cefoperazone	25
Cefquinome	25
Ceftiofur	500
Amoxicillin	25
Ampicillin	25
Cloxacillin	150
Dicloxacillin	150
Nafcillin	150
Oxacillin	150
Penicillin G (Benzylpenicillin)	25
Penicillin V (Phenoxymethylpenicillin)	12.5
Lincomycin	2.5
Pirlimycin	15
Erythromycin (Erythromycin A)	100
Gamithromycin	2.5
Neospiramycin	25
Spiramycin	10
Tildipirosin	50
Tilmicosin	5
Tylosin A	10
Tylvalosin (Acetylisovaleryltylosin, Aivlosin)	10
Bacitracin A	75
Desfuroylceftiofur (DCF)	50
Desfuroylceftiofur cysteine disulfide (DCCD)	50
Tiamulin	5
Valnemulin	5
Florfenicol	500
Thiamphenicol	1
Pyrantel	2.5
Amprolium	5

A2a: Chloramphenicol

A3c: Antimicrobials substances.

B1a: Antimicrobials substances.

B1b: Insecticides, fungicides, anthelmintics and other antiparasitic agents.

B2: Authorised coccidiostats and histomonostats.

Group A1a, A1c, A1d & B1d (CER ANA30):	Decision Limit
<i>Analysis of Steroids & Additional A1a Stilbenes, A1d Zeranols & B1d Corticosteroids by LC-MS/MS</i>	CC_{alpha} (µg/kg)
Dienestrol	0.66
Diethylstilbestrol (Stilbestrol)	0.59
Hexestrol	0.66
17a Nandrolone	0.57
17a-Boldenone	0.56
19-Nortestosterone / Nandrolone	0.62
Acetoxy-Progesterone	2.79
Boldenone	0.57
Caproxyprogesterone	3.29
Chlormadinone acetate	0.95
Clostebol acetate	34.7
Ethinylestradiol	0.62
Medroxyprogesterone 17-acetate	0.58
Megestrol 17-acetate	0.96
Melengestrol 17-acetate	1
Methyl-Boldenone (Dianabol)	0.62
Methyltestosterone	0.61
Norethandrolon	1.14
Norgestrel	3.1
Trenbolone	0.63
Trenbolone 17-acetate	1.22
Alpha-Zearalanol (Zeranol)	0.86
Beta Zearalanol (Taleranol)	0.86
Delmadinone acetate	0.58
Flugestone-17-Acetate	2.66

A1a: Stilbenes

A1c: Steroids,

A1d: Resorcylic acid lactones including zeranol

B1d Non-steroidal anti-inflammatory drugs (NDAIDS), corticosteroids and glucocorticoids

Appendix 2: Accreditation to ISO/IEC 17025

The table below outlines the parameters as tested for the residue programme at the Marine Institute for which the Marine Institute is accredited by the Irish National Accreditation Board (INAB) to ISO/IEC 17025 as detailed in Scope Registration Number 130T (<https://www.inab.ie/inab-directory/laboratory-accreditation/testing-laboratories/marine-institute.html>).

Scope Registration Number 130T

Test	SOP
Quantitative Screening Analysis of Cypermethrin and Deltamethrin - finfish	CHE-215
Analysis of Antibiotics by LCMSMS ((Confirmatory method: Qualitative & Quantitative analysis - finfish) and Qualitative Screening method - crustaceans	CHE-220
Analysis of Dyes by Thermo LCMSMS (Confirmatory method: Qualitative & Quantitative analysis) - finfish	CHE-223

Appendix 3: Quality Control

To check the quality of the data produced during the 2024 NRBCP – Plan 1 for residues in farmed fish, Quality Control (QC) samples in the form of either reagent blanks, spiked samples or Certified Reference Materials (CRMs) were analysed with each batch of samples tested by the Marine Institute.

The quality assurance results were considered sufficient for the purpose of the monitoring programme. Where available the MI participate in Proficiency schemes such as FAPAS, EURL-PTs, NRL-PTs where available to verify our analytical methods independently.

Quality Control information for tests carried out at the Marine Institute is available on request.

Additional tests carried out by approved external provider laboratories are listed in Appendix 4, these laboratories are accredited to ISO/IEC 17025.

Appendix 4: Methods of Analysis

Analysis carried out at the Marine Institute laboratories unless otherwise stated. reference Appendix 1 for Decision limit (CC_{α}) and detection capability (CC_{β}).

1.1 Sample Collection and Preparation (MI SOP CHE-6): MI Testing Laboratory

In accordance with the 2024 National Residues Control Plan for Aquaculture, Staff authorised under the Veterinary Medicinal Products, medicated Feed and Fertilisers Regulation Act 2023, collected samples at farms or at processing plants. All samples were transported to the laboratory under controlled conditions, while ensuring an unbroken chain of custody.

In 2025, MI will align the sampling programme for aquaculture with the overall national residue programme with DAFM Veterinary Inspectors to take on-farm OSOP aquaculture samples and MI to take harvest samples. As accreditation for sampling is not a requirement under the Residue legislation. MI suspended accreditation for residue sampling (CHE-6) in February 2025 as sampling will no longer be carried out by MI only.

1.2 Subsampling of Residues Samples (MI SOP CHE-7): MI Testing Laboratory

Samples are accepted by staff in the laboratory; sub-samples were taken for both analytical and archive purposes and all sub-samples were stored frozen ($< -18^{\circ}\text{C}$). This is completed by a member of the residues team or a trained support staff.

1.3 Residues BCP Samples (MI SOP CHE-157): MI Testing Laboratory

Samples are accepted by staff in the laboratory; subsampling is completed by a member of the residues team or a training support staff for routine BCP samples where sub-samples are taken for both analytical and archive purposes and all sub-samples were stored frozen. Safeguard and IOC samples which require a fast turnaround time are sent directly to external provider laboratory to be subsamples and tested in that laboratory.

1.4 Analysis of Antibiotics by Ultra-Fast Liquid Chromatography (UFLC) with MS/MS: (MI SOP CHE-220) MI Testing Laboratory

Antibiotics are extracted from samples with 1% Oxalic Acid in Acetonitrile by shaking in the presence of Sodium sulphate. The eluant is then mixed with C18 Bondesil, allowed to settle, and 900 μl of this is mixed with 300 μl of deionized water, vortexed and filtered and analysed by reversed-phase Liquid Chromatography (LC) coupled to Mass Spectrometry (MS). For the full list of analytes tested for this method see Appendix 1.

1.5 Analysis of Dyes by Ultra-Fast Liquid Chromatography (UFLC) with MS/MS (MI SOP CHE-233): MI Testing Laboratory

Samples were extracted for Dyes analysis with Acetonitrile by shaking in the presence of hydroxylamine and magnesium sulphate. The eluant is evaporated to dryness followed by reconstitution in a mixture of acetonitrile/water /ascorbic acid solution. This solution is centrifuged, filtered and analysed for brilliant green, crystal violet, leuco crystal violet, leuco malachite green, malachite green and victoria blue by Ultra-Fast Liquid Chromatography coupled to Mass Spectrometry (UFLC-MS/MS).

1.6 Analysis for Pyrethroids by Gas Chromatography-Mass Spectrometry (GC-MSMS) (MI SOP CHE-215): MI Testing Laboratory

Samples were extracted using a modified QUECHERS approach followed by dispersive solid phase extraction (DSPE) and a secondary clean up using florisil solid phase extraction. The extract was reconstituted in iso-octane and analysed by GC-MSMS for cypermethrin (sum of isomers) and deltamethrin (cis-deltamethrin).

1.6 Analysis of Steroids & additional A1a Stilbenes, A1d zeranol and NSAIDs by LC-MS/MS: (CER Method ANA30): External provider - CER Groupe Laboratory

A sub-sample is extracted twice with ethyl acetate and analysed for stilbenes, steroids, resorcylic acid lactones (including zeranol) and NSAIDs substances by CER Groupe Laboratory by Liquid Chromatography coupled to mass spectrometry (LC-MS/MS). For full list of analytes tested for this method see Appendix 1.

1.8 Analysis of Chloramphenicol, Phenicol and Antimicrobial Substances by LC-MS/MS: (CER Method ANA99G): External provider - CER Groupe Laboratory

Samples were extracted twice with ethyl acetate and analysed for Chloramphenicol, Phenicol, Beta-Lactams: Penicillins and Cephalosporins, Macrolides, Lincosamides, Pleuromutilins and analytes Pyrantel and Amprolium. For full list of analytes tested for this method see Appendix 1. Samples were tested by CER using their screening or confirmatory LC-MS/MS method. See Appendix 6 for list of confirmatory test methods used.

1.9 Analysis of Nitrofurans by LC-MS/MS: (CER Method ANA85): External provider - CER Groupe Laboratory

Analysis of nitrofurans was carried out by CER Groupe Laboratory. Samples are derivatised with 2-nitrobenzaldehyde followed by extraction with ethyl acetate and determined by Liquid Chromatography coupled to mass spectrometry (LC-MS/MS). Metabolites for furazolidone, furaladone, nitrofurantoin and nitrofurazone are analysed.

1.10 Analysis of Nitroimidazoles by LC-MS/MS: (CER method ANA90): External provider - CER Groupe Laboratory

Analysis of nitroimidazoles was carried out by CER Groupe Laboratory. After the addition of buffers and sodium chloride the samples are extracted with acetonitrile and determined by Liquid Chromatography coupled to mass spectrometry (LC-MS/MS) and analysed for the following nitroimidazoles: dimetridazole and its metabolite, ipronidazole and its metabolite, metronidazole and its metabolite and ronidazole.

1.11 Analysis of Benzoylurea & Acyl-Urea Derivatives, Avermectins, Benzimidazoles and other Antiparasitics by LC-MS/MS: (CER Method ANA98): - External provider CER Groupe Laboratory

A sub-sample is extracted twice with ethyl acetate and analysed for benzoylurea & acyl-urea derivatives, avermectins, benzimidazoles and other antiparasitics by Liquid Chromatography coupled to mass spectrometry (LC-MS/MS). For full list of analytes tested for this method see Appendix 1.

Appendix 5: Sampling strategy in accordance with Annex III of Delegated Regulation (EU) 2022/1644

<p>1. Sampling shall be carried out in variable intervals spread evenly over all months of the year or relevant production period. In this context, it shall be considered that a number of pharmacologically active substances are administered only in particular seasons.</p>
<p>2. Sampling shall be performed at or close to slaughter, collection or harvest. However, for Group A substances sampling should also be performed at any relevant stage in the life cycle of the animals.</p>
<p>3. All samples shall be targeted according to the criteria laid down in the national control plan.</p> <p>For Group A substances, sampling shall be targeted at detection of illegal treatment with prohibited or unauthorised substances – thus animals which are most likely to have been treated are preferentially selected over those animals which are not, and, as much of this sampling is carried out on farm, samples of drinking water and feed may be appropriate in addition to inedible materials such as blood, urine, faeces, hair etc.</p>
<p>4. For Group B substances, samples shall comprise only edible tissues/products (the objective is to verify compliance with maximum residue limits and maximum levels).</p> <p>Sampling shall be targeted on products from those animals, which are most likely to have been treated with a specific pharmacologically active substance or substance within therapeutic class of veterinary medicinal products.</p>
<p>5. Criteria for the selection of the animals or products to be controlled for each food business operator to be controlled:</p> <ul style="list-style-type: none">- history of non-compliance of the farm or producer.- shortcomings in the application of veterinary medicinal products, deficiencies identified in previous controls, reported increase of losses of animals on the farm, animal health status of the farm, epidemiological status of the region.- common practices with regard to the administration of particular pharmacologically active substances in the respective farm or production system.- indications of the use of pharmacologically active substances.- the absence or the unreliability of own-checks, the membership of quality assurance schemes (when available) and results of testing under such schemes.- evidence of insufficient supervision of the farm by veterinarians.- representative sampling regardless the size of the food business operator.
<p>6. Criteria for the selection of slaughterhouses, cutting plants, establishments for the milk production, establishments for the production and placing on the market of aquaculture products, establishments for honey and egg and egg packing centres from which samples should be taken:</p> <ul style="list-style-type: none">— the criteria listed under points A.2 and B.1 of Annex II and point 6 of this Annex;— the respective establishments' share of the country's total production volume;— non-compliance identified in earlier controls on the use of pharmacologically active substances and residues thereof in animals and animal products;— origins and transport routes of the slaughtered animals, milk, eggs or honey;— absence of participation in quality assurance programmes (when available);— the scope and results of own-checks for residues.
<p>7. When taking the samples, efforts shall be made to avoid multiple sampling (i.e. the taking of several different samples from a single animal/product (unless the different samples are analysed for a different group of substances), or sampling several animals/products from a single producer on a given day when samples could be drawn from animals/products from several producers which would satisfy the targeting criteria) unless the operator has been identified on the basis of the criteria included in point 6 or an appropriate justification has been provided in the control plan. The compliance with the planned frequency of checks shall be ensured.</p>

Appendix 6: 2024 Plan for the Monitoring and Detection of Residues in Aquaculture Products

1	Legislation § COMMISSION DELEGATED REGULATION (EU) 2022/1644 of July 2022 supplementing Regulation (EU) 2017/625 of the European Parliament and of the Council with specific requirements for the performance of official controls on the use of pharmacologically active substances authorised as veterinary medicinal products or as feed additives and of prohibited or unauthorised pharmacologically active substances and residues thereof § COMMISSION Implementing REGULATION (EU) 2022/1646 PRACTICAL ARRANGEMENTS of 23 September 2022 on uniform practical arrangements for the performance of official controls as regards the use of pharmacologically active substances authorised as veterinary medicinal products or as feed additives and of prohibited or unauthorised pharmacologically active substances and residues thereof, on specific content of multi-annual national control plans and specific arrangements for their preparation § COMMISSION IMPLEMENTING REGULATION (EU) 2021/808 of 22 March 2021 on the performance of analytical methods for residues of pharmacologically active substances used in food-producing animals and on the interpretation of results as well as on the methods to be used for sampling and repealing Decisions 2002/657/EC and 98/179/EC & COMMISSION IMPLEMENTING REGULATION (EU) 2021/810 of 20 May 2021 amending Implementing Regulation (EU) 2021/2021/808 as regards transitional provisions for certain substances listed in Annex II to Decision 2002/657/EC National Legislation § reference DAFM Overall NRCP plan for details
2	Relevant Departments and their Infrastructure § Marine Institute (MI) Rinville, Oranmore, Co. Galway § Dept of Agriculture, Food & Marine (DAFM) , Agriculture House, Kildare Street, Dublin 2 § Sea-Fisheries Protection Authority (SFPA) , Block B, Clogheen, Clonakilty, Co. Cork
3	Staff Resources to Carry out Plan § Authorised Officers will collect all samples. § Analysis of Group A substances - performed by MI & CER Groupe- (new Tender to be published in 2nd half of 2025) § Analyses for Group B substances -- performed by MI & CER Groupe-(new Tender to be published in 2nd half of 2025)
4	Approved Laboratories § Marine Institute (MI) Rinville, Oranmore, Co Galway H91R673 § CER Groupe Rue du Point du jour 8, B-6900 MARLOIE (BELGIUM)
5	Sampling Levels and Frequency § finfish: reference below
6	Testing § 2024 Aq finfish (Group B) – see below § 2024 Aq finfish (Group A) – see below
7	Notes § Where there is no MRL in fish but MRL 'muscle' authorised in another species this MRL is inserted into the Aquaculture NRCP. CC_{α} can be calculated using two approaches a) cascade use b) no cascade use. For purpose of this plan the CC_{α} that will be inserted will be for "a) cascade use". During testing of samples and if a substance was found in a sample a review will be carried out with DAFM to determine whether it was authorised to be used under cascade and if not CC_{α} will be calculated for "b) no cascade use". note: where sum the highest DL is used to report if non-compliant, the plan reflects the highest DL of the individual

**ANNUAL PLAN FOR THE EXAMINATION FOR RESIDUES
IN FARMED FINFISH FOR THE YEAR 2024**

2024 Aquaculture- Finfish Plan				
Sampling levels and frequency:				
Commodity group:				
Finfish				
Minimum number of fish from which samples must be taken.				
Total Tonnes Produced 2022^(a)	Minimum no. to be tested for Group A as per Annex I Com. Implem. Reg 2022/1646^(a)	Minimum No. Group A	Minimum no. to be tested for Group B as per Annex I Com. Implem. Reg 2022/1646^(a)	Minimum No. Group B
12,391	Group A Minimum 1 sample per 300 tonnes of annual production of aquaculture for the first 60,000 tonnes of production and then 1 additional sample for each additional 2,000 tonnes	1 sample per 300 Min Test = 41	Group B Minimum 1 sample per 300 tonnes of annual production of aquaculture for the first 60,000 tonnes of production and then 1 additional sample for each additional 2,000 tonnes	1 sample per 300 Min Test = 41

(a) min no. to be tested will be based on 2022 finfish production figures as 2023 figures are not available

Note: For CC_{alpha} and CC_{beta} details reference Appendix 1.

Groups of substances to be controlled		NUMBER OF SAMPLES PLANNED	COMPOUND or MARKER RESIDUE	SCREENING METHOD	CONFIRMATORY METHOD	LABORATORY NAME
A1c	Steroids with androgenic, estrogenic or progestagenic activity	46	Dienestrol	-	UPLC/MS-MS (ANA30)	CER Groupe
			Diethylstilbestrol (Stilbestrol)			
			Hexestrol			
			17 alpha-Nortestosteron			
			17 beta-Nortestosteron			
			Acetoxy-Progesterone			
			alpha-Boldenone			
			beta-Boldenone			
			beta-Trenbolone			
			Boldenone Methyl			
			Caproxyprogesterone			
			Chlormadinone acetate			
			Clostebol acetate			
			Delmadinone acetate			
			Ethinylestradiol			
			Flugestone-17-Acetate			
			Medroxyprogesterone 17-acetate			
			Megestrol 17-acetate			
			Melengestrol 17-acetate			
			Methyltestosterone			
			Norethandrolon			
Norgestrel						
Trenbolone 17-acetate						
alpha-Zearalanol						
beta-Zearalanol						
A2a	Chloramphenicol	46	Chloramphenicol	UPLC-MS-MS (ANA99G)	UPLC-MS-MS (ANA82)	CER Groupe
A2b	Nitrofurans	46	AHD	-	UPLC-MS-MS (85)	CER Groupe
			AMOZ			
			AOZ			
			DNSH			
			SEM			

Groups of substances to be controlled		NUMBER OF SAMPLES PLANNED	COMPOUND or MARKER RESIDUE	SCREENING METHOD	CONFIRMATORY METHOD	LABORATORY NAME
A2c	Nitroimidazoles	46	Dimetridazole	-	UPLC-MS-MS (ANA90)	CER Groupe
			Metronidazole			
			Ronidazole			
			Carnidazole			
			HMMNI			
			Hydroxymetronidazole			
			Ipronidazole			
			IPZOH (Hydroxyipronidazole)			
			Ornidazole			
			Secnidazole			
			Ternidazole			
			Tinidazole			
A2d	Other A2 substances	46	Dapsone	-	UPLC-MS-MS (CHE-220)	MI
A3a	Dyes	46	Malachite Green (MG)	-	UPLC-MS-MS (CHE-233)	MI
			Leuco Malachite Green (LMG)			
			Brilliant Green (Basic Green) (BG)			
			Crystal Violet (Basic Violet 3) (CV)			
			Leuco Crystal Violet (LCV)			
			Victoria Blue (VB)			
			Sum of Malachite Green and Leuco Malachite Green			
			Sum of Crystal Violet and Leuco Crystal Violet			
A3c	Unauthorised antimicrobials	46	Nalidixic acid	-	UPLC-MS-MS (CHE-220)	MI
			Norfloxacin			
			Demeclocycline			
			Cinoxacin	UPLC-MS-MS (ANA99G)	UPLC-MS-MS (ANA64 and ANA38)	CER Groupe
			MQCA (metabolite Olaquinox)			
			Ormetoprim			
			Clarithromycine			
			Oleandomycine			
			Ofloxacin			
			Carbadox			
			Olaquinox			
			QCA (metabolite carbadox)			

Groups of substances to be controlled		NUMBER OF SAMPLES PLANNED	COMPOUND or MARKER RESIDUE	SCREENING METHOD	CONFIRMATORY METHOD	LABORATORY NAME
A3d	Anthelmintics	46	Nemadectin	-	UPLC-MS-MS (ANA98)	CER Groupe
			Cambendazole			
			Parbendazole			

Groups of substances to be controlled		NUMBER OF SAMPLES PLANNED	COMPOUND or MARKER RESIDUE	SCREENING METHOD	CONFIRMATORY METHOD	LABORATORY NAME
B1a	Antimicrobials	46	Tetracycline	-	UPLC-MS (CHE-220)	MI
			Doxycycline			
			Chlortetracycline			
			Epichlortetracycline			
			Oxytetracycline			
			Epioxytetracycline			
			Tetracycline			
			Epitetracycline			
			Quinolones			
			Danofloxacin			
			Difloxacin			
			Flumequine			
			Marbofloxacin			
			Norfloxacine			
			Oxolinic acid			
			Sarafloxacin			
			Ciprofloxacin			
			Enrofloxacin			
			Sulphonamides			
			Sulfachloropyridazine			
			Sulfadiazine			
			Sulfadimethoxine			
			Sulfadoxine			
			Sulfaguandine			
			Sulfamerazine			
			Sulfamethazine			
			Sulfamethizole			
			Sulfamethoxazole			
			Sulfamethoxyipyridazine			
			Sulfamonomethoxine			
			Sulfapyridine			
			Sulfaquinoxaline			
			Sulfathiazole			
			Sulfisoxazole			
			Sulfacetamide			
			Sulfameter			
			Sulfamoxole			
			Sulfachloropyrazine			
			Sulfaethoxyipyrazine			
			Sulfisomidine			
			Sulfatroxazole			
			Sulfasalazine			
			Sulfabenzamide			
			Sulfaphenazole (sulfafenazol)			

Groups of substances to be controlled		NUMBER OF SAMPLES PLANNED	COMPOUND or MARKER RESIDUE	SCREENING METHOD	CONFIRMATORY METHOD	LABORATORY NAME										
B1a	Antimicrobials	46	Other B1 Antibacterials	-	UPLC-MS (CHE-220)	MI										
			Trimethoprim		UPLC-MS-MS (ANA99G)		UPLC-MS (ANA38)									
			Desfuroylceftiofur (DCF)				UPLC-MS-MS (ANA82)									
			Desfuroylceftiofur cysteine disulfide (DCCD)													
			Phenicols				UPLC-MS-MS (ANA99G)	UPLC-MS (ANA64)								
			Florfenicol													
			Florfenicol amine													
			Thiamphenicol													
			Beta-Lactams: Penicillins						UPLC-MS-MS (ANA99G)	UPLC-MS (ANA64)						
			Amoxicillin													
			Ampicillin													
			Cloxacillin													
			Dicloxacillin													
			Nafcillin													
			Oxacillin													
			Penicillin G (Benzylpenicillin)													
			Penicillin V (Phenoxymethylpenicillin)													
			Beta-Lactams: Cephalisporin:								UPLC-MS-MS (ANA99G)	UPLC-MS (ANA64)				
			Cefalexin													
			Cefalonium													
			Cefapirin													
			Cefazolin													
			Cefoperazone													
			Cefquinome													
			Lincosamides										UPLC-MS-MS (ANA99G)	UPLC-MS (ANA64)		
			Lincomycin													
			Pirlimycin													
			Macrolides												UPLC-MS-MS (ANA99G)	UPLC-MS-MS (ANA82)
			Spiramycin													
			Tildipirosin													
			Tilmicosin													
Tylosin A																
Tylvalosin (Acetylisovaleryltylosin, Aivlosin)																
Erythromycin (Erythromycin A)																
Gamithromycin																
Neospiramycin																

Groups of substances to be controlled		NUMBER OF SAMPLES PLANNED	COMPOUND or MARKER RESIDUE	SCREENING METHOD	CONFIRMATORY METHOD	LABORATORY NAME
B1b	Insecticides, fungicides, anthelmintics and other antiparasitic agents	46	<u>Avermectins</u>	-	UPLC-MSMS (98)	CER Groupe
			Ivermectin			
			Enamectin B1a			
			Doramectin			
			<u>Benzoflurea & Acyl-Urea Derivatives</u>			
			Teflubenzuron			
			Lufenurone			
			Diflubenzuron			
			Fluazuron			
			Hexaflumuron			
			<u>Avermectins</u>			
			Nemadectin			
			Abamectin (Avermectin B1a)			
			Eprinomectin			
			Moxidectin			
			<u>Benzimidazole</u>			
			Cambendazole			
			Parbendazole			
			2-Amino flubendazole			
			5-Hydroxythiabendazole			
			Albendazol-2-aminosulfone			
			Albendazole			
			Albendazole sulfone			
			Albendazole sulfoxide			
			Aminomebendazole			
			Cyclopentyl albendazole sulfoxide			
			Febantel			
			Fenbendazole			
			Flubendazole			
			Hydroxymebendazole			
			Ketotriclabendazole			
			Mebendazole			
			Oxfendazole			
			Oxfendazole sulfone			
			Oxibendazole			
			Reduced flubendazole			
Thiabendazole						
Triclabendazole						
Triclabendazole sulfone						
Triclabenzole sulfoxide						

Groups of substances to be controlled		NUMBER OF SAMPLES PLANNED	COMPOUND or MARKER RESIDUE	SCREENING METHOD	CONFIRMATORY METHOD	LABORATORY NAME
B1b	Insecticides, fungicides, anthelmintics and other antiparasitic agents	46	Salicylicanilides	-	UPLC-MSMS (98)	CER Groupe
			Closantel			
			Oxyclozanide			
			Rafoxanide			
			Other B1b Substances			
			Monepantel sulfone			
			Levamisole			
			Nitroxinil			
			Clorsulon			
			Praziquantel			
			Pyrethroids			
			Cypermethrine [Cypermethrin (sum of isomers)]			
			Deltamethrin			

Appendix 7: Annual Plan for Random Sampling of Fishery Products and Other Seafood at Dublin Port BCP 2024

Group	Test	TRACES sampling list	Samples to be taken	Laboratory
Residues (as per Regulation 2022/1644 and Regulation 2022/1646)				
A.3.(a)	Dyes*	Malachite Green (MG) Leuco Malachite Green (LMG) Brilliant Green (BG) Crystal Violet (CV) Leuco Crystal Violet (LCV) Victoria Blue (VB)	4 ∞ aquaculture samples* (shellfish* & finfish relative to consignment numbers) ∞ Samples numbers subject to change	Residues Coordinator, Marine Institute, Rinville, Oranmore, Galway. H91 R673. Website: www.marine.ie * MI accredited for finfish only
B.1 (a)	Antibacterial substances	Antibacterial substances (Tetracyclines, quinolones, sulphonamides)	8 ∞ aquaculture samples Targeting farmed spp. E.g. shrimp (shellfish & finfish relative to consignment numbers) ∞ Samples numbers subject to change	Residues Coordinator, Marine Institute, Rinville, Oranmore, Galway. H91 R673. Website: www.marine.ie

Appendix 8: Annual Plan for Random Sampling of Fishery Products and Other Seafood at Dublin Airport BCP 2024

Group	Test	TRACES sampling list	Samples to be taken	Laboratory
Residues (as per Regulation 2022/1644 and Regulation 2022/1646)				
B.1 (a)	Antibacterial substances	Antibacterial substances (Tetracyclines, quinolones, sulphonamides)	<p>1 ∞ aquaculture samples</p> <p>(shellfish & finfish relative to consignment numbers)</p> <p>∞ Samples numbers subject to change</p>	<p>Residues Coordinator, Marine Institute, Rinvilla, Oranmore, Galway. H91 R673.</p> <p>Website: www.marine.ie</p>



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