

NATIONAL RESIDUE CONTROL PLAN REPORT 2020

Background on the National Residue Control Plan

1. Under EU legislation (Article 19 of Regulation (EU) 2017/625¹), each member state is required to implement a residue monitoring plan and to submit their programmes annually to the European Commission for approval. Ireland's National Residue Control Programme (NRCP) for 2020 was approved by the European Commission. Third Countries wishing to export animal products to the EU are similarly required to satisfy the European Commission that their legislation, controls and residue surveillance measures provide equivalent guarantees for EU consumers.
2. The scope of testing under the NRCP is very comprehensive, covering 8 food producing species, milk, eggs and honey and 18 distinct residue groups (each residue group is, in turn, comprised of a number of sub-groups). These residue-groups fall into four broad categories: banned substances, such as growth-promoting hormones; authorised veterinary medicines; approved animal feed additives and environmental contaminants. Implementation of the NRCP involves taking samples from food producing species at farm and primary processing/packing levels. This strategic approach reflects current scientific and analytical advice designed to maximise the effectiveness of the testing regime by sampling the most appropriate matrix for each substance.
3. Most samples (c. 87%) are taken in accordance with criteria designed to target animals or products that are more likely to contain illegal residues ('targeted sampling'). The results also reflect the outcome of sampling conducted in specific cases where the presence of illegal residues was suspected ('suspect sampling') by Department or Local Authority inspectors. This can arise, for example, on the basis of the ante or post-mortem examinations of animals at slaughterhouses or following further detailed risk analysis. In such cases, the animals/products concerned are withheld from the food chain, pending the outcome of the analysis. In the event of a positive result from routine targeted samples,

¹ Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products, amending Regulations (EC) No 999/2001, (EC) No 396/2005, (EC) No 1069/2009, (EC) No 1107/2009, (EU) No 1151/2012, (EU) No 652/2014, (EU) 2016/429 and (EU) 2016/2031 of the European Parliament and of the Council, Council Regulations (EC) No 1/2005 and (EC) No 1099/2009 and Council Directives 98/58/EC, 1999/74/EC, 2007/43/EC, 2008/119/EC and 2008/120/EC, and repealing Regulations (EC) No 854/2004 and (EC) No 882/2004 of the European Parliament and of the Council, Council Directives 89/608/EEC, 89/662/EEC, 90/425/EEC, 91/496/EEC, 96/23/EC, 96/93/EC and 97/78/EC and Council Decision 92/438/EEC (Official Controls Regulation)

where animals/products are not detained, food is withdrawn or recalled from the market, if deemed necessary in the interests of public health following a risk assessment by the Food Safety Authority of Ireland (FSAI).

4. Virtually all positive results lead to a follow-up investigation at the farm of origin coordinated by the Department of Agriculture, Food and the Marine (the Department) officials. This investigation involves not just an examination of the cause of the particular breach, but also a general review of the arrangements in place on the farm in relation to veterinary medicines, including record-keeping. Follow-up measures are taken, including, where appropriate, restriction of farms and application of the appropriate penalty to the farmer's Single Payment arising from Cross-Compliance requirements. Positive results also usually result in an increased level of residue monitoring for the farmer or supplier concerned.
5. Samples are analysed at officially approved laboratories holding accreditation to the International Standard (ISO 17025) and incorporating current analytical technology. The laboratory network continuously engages in research and development of analytical methodologies in line with scientific developments under the guidance of the EU reference laboratories. This ensures improvement in analytical capability with a view to meeting current and future requirements towards enhancement of consumer protection. The fruits of this work are evidenced by the fact that laboratories are now capable of detecting residues at extremely low levels.
6. In addition to official testing carried out by the Department and Local Authorities, primary processors in the red and white meat and milk sector carry out self-monitoring residue testing. Processors submit annual residue monitoring plans to the Department for approval. Under this regime, processors apply a progressively increasing scale of testing to suppliers of residue positive animals or milk.

Outcome of 2020 official testing

8. In 2020, a total of 16,196 samples were taken from all 8 food producing species, as well as from milk, eggs and honey. The overall level of non-compliance across all substances was 20 or 0.12%. The comparable level for 2019 was 53, or 0.31% (53/16,911), 2018 was 0.24% (42/17,344), 2017 was 0.3% (51/18,513).
9. An overview of the distribution of sampling across species/products and residue groups is provided in Appendix 1. An overview of all positives results is provided in Appendix 2, while more detailed information on these positives is given in Appendix 3.
10. The Department has a particular focus on laboratory findings that indicate a potential use of banned substances i.e. hormones or other growth promoters prohibited under the EU Hormone Ban (Directive 96/22/EC²) or otherwise banned on public health grounds (Table 2 to Commission Regulation 37/2010). In the course of the 2020 NRCP, a target sample from a bovine animal at farm level was found to contain Boldenone (a substance that is prohibited for use in food-producing animals). The Department's follow up investigation concluded that there was no evidence of illegal use of Boldenone.
11. In 2020, the substance Thiouracil was detected in 4 animals in the bovine (2) and ovine (2) sector. The presence of Thiouracil may potentially indicate the use of growth promoters covered by the EU Hormone Ban. In each of the 4 detected instances this year, the Department's investigations concluded that no illegal administration had taken place. Current national and EU scientific evidence is that given the very low levels found, it is recognised that they are most likely attributable to natural/environmental or dietary factors e.g. feeding diets rich in cruciferous plants.
12. Residues of authorised veterinary medicines in excess of Maximum Residue Limits (MRLs) set for the major food-producing species under Commission Regulation 37/2010 were found in a total of 15 samples. In the case of antibiotic medicines, where testing continues at levels well in excess of those required by EU obligations, the overall positive level across all species/products in 2020 was 0.08% (i.e. 5 non-compliant results out of 5,982 samples, this figure includes milk and honey). In the case of 3 bovine suspect animals involved, each carcass had been detained on suspicion by Department veterinary inspectors in slaughter plants and were excluded from the food chain on foot of the

² Council Directive 96/22/EC concerning the prohibition on the use in stock-farming of certain substances having a hormonal or thyrostatic action and of beta-agonists, and repealing Directives 81/602/EEC, 88/146/EEC and 88/299/EEC

analytical results. One bovine target and one porcine target sample also tested positive for antibiotics. In the bovine, ovine and milk sectors, 8 samples (2 bovine, 2 ovine and 4 milk) contained residues of anthelmintics (medicines for the control and treatment of parasites) which indicated that specified post-treatment withdrawal periods had not been observed or incorrect administration had occurred. One bovine animal contained residues of corticosteroids (a medicine used for the treatment of inflammatory or allergic conditions). Risk assessments conducted by the FSAI did not indicate an unacceptable risk to consumer health and therefore it was not necessary to recall the product. It should be noted that the number of anthelmintic positives in 2020 is a significant decrease on the 2019 figure (14 anthelmintic positives).

13. In the equine sector 1 sample tested positive for oxyphenbutazone (non-steroidal anti-inflammatory drug NSAIDs). NSAIDs are prohibited for use in equines intended for human consumption. The carcass for this animal did not enter the food chain and was sent for destruction.
14. In the aquaculture sector, the Sea Fisheries Protection Authority (SFPA), in conjunction with the Department with support from the Marine Institute (MI), are responsible for residue controls on farmed finfish under the national residue-monitoring plan. In 2020, in excess of 626 tests and a total of 1,888 determinants were carried out on 120 samples of farmed finfish for a range of residues. No non-compliant results were reported from the national monitoring programme for farmed finfish in 2020. Overall, the outcome for aquaculture remains one of consistently low occurrence of residues in farmed finfish, with 0% non-compliant target residue results for the period 2006-2014, with a slight increase to 0.11% in 2015 and 0.10% in 2016 and no non-compliant target results for the period 2017 to 2020.
15. Separate from the NRCP and in order to monitor conformity with Community legislation, products of animal origin entering the EU through Ireland are subject to sampling and analysis for residues. Tests are carried out under monitoring plans or on suspicion of an irregularity. In 2020, 121 samples were taken from consignments imported directly into Ireland from countries outside the EU/EEA. No positive sample was identified.

APPENDIX 1**OVERVIEW OF THE NUMBER OF SAMPLES TAKEN UNDER THE DEPARTMENT OF AGRICULTURE, FOOD & THE MARINE'S RESIDUE MONITORING PROGRAMME FOR 2020**

Product Category	Sampling Point	Suspect Sampling	Targeted Sampling	Total
Bovine	Farm	1	2,156	2,157
	Slaughter	1,117	5,471	6,588
	Total	1,118	7,627	8,745
Porcine	Farm	0	55	55
	Slaughter	79	1,934	2,013
	Total	79	1,989	2,068
Sheep	Slaughter	9	1,778	1,787
	Total	9	1,778	1,787
Goats	Slaughter	0	0	0
	Total	0	0	0
Poultry	Farm	0	100	100
	Slaughter	0	1,313	1,313
	Total	0	1,413	1,413
Horses	Slaughter	9	149	158
	Total	9	149	158
Wild Game*	Slaughter	0	106	106
	Total	0	106	106
Milk	Farm	1	1,406	1,407
	Total	1	1,406	1,407
Eggs	Farm	1	307	308
	Total	1	307	308
Honey	Farm	0	84	84
	Total	0	84	84
Aquaculture	Farm	0	120	120
	Total	0	120	120
Total		1,217	14,979	16,196

*Includes 11 Farmed Game Samples

APPENDIX 2

SUMMARY OF THE ANALYSIS OF DEPARTMENT OF AGRICULTURE, FOOD & THE MARINE'S RESIDUE MONITORING PROGRAMME FOR 2020

Group A Prohibited Substances

<u>Substance</u>	<u>Bovine</u>		<u>Pigs</u>		<u>Sheep/Goats</u>		<u>Poultry</u>		<u>Milk</u>		<u>Horses</u>		<u>Aquaculture</u>		<u>Eggs</u>		<u>Farm Game/Wild Game</u>		<u>Honey</u>	
	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.
A1	248	-	46	-	17	-	98	-	-	-	1	-	5	-	-	-	-	-	-	-
A2	266	2	40	-	19	2	18	-	-	-	2	-	-	-	-	-	-	-	-	-
A3	1750	1	286	-	94	-	59	-	57	-	7	-	47	-	-	-	-	-	-	-
A4	276	-	61	-	43	-	88	-	-	-	1	-	5	-	-	-	1	-	-	-
A5	1209	-	108	-	77	-	85	-	-	-	4	-	-	-	-	-	1	-	-	-
A6	983	-	470	-	175	-	328	-	88	-	10	-	46	-	97	-	1	-	26	-
Total No. Analyses	4732	3	1011	-	425	2	676	-	145	-	25	-	103	-	97	-	3	-	26	-

Group B - Veterinary Drugs and Contaminants

B 1 – Antibacterial Substances

Substance	Bovine		Pigs		Sheep/Goats		Poultry		Milk		Horses		Aquaculture		Eggs		Farm Game		Honey	
	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.
B1	3183	4	919	1	739	-	416	-	422	-	37	-	80	-	154	-	2	-	14	-

B 2 - Other Veterinary Drugs

Substance	Bovine		Pigs		Sheep/Goats		Poultry		Milk		Horses		Aquaculture		Eggs		Farm Game/Wild Game		Honey	
	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.
B2a	530	2	90	-	382	2	78	-	394	4	10	-	80	-	-	-	-	-	-	-
B2b	291	-	64	-	99	-	333	-	88	-	2	-	8	-	80	-	-	-	16	-
B2c	161	-	36	-	94	-	263	-	-	-	4	-	80	-	29	-	1	-	20	-
B2d	60	-	45	-	16	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-
B2e	130	-	67	-	40	-	26	-	95	-	63	1	-	-	-	-	-	-	-	-
B2f	208	1	169	-	110	-	241	-	82	-	8	-	88	-	46	-	-	-	19	-
Total No. Analyses	1380	3	471	-	741	2	941	-	659	4	94	1	256	-	155	-	1	-	55	-

B 3 - Other Substances and Environmental Contaminants

Substance	Bovine		Pigs		Sheep/Goats		Poultry		Milk		Horses		Aquaculture		Eggs		Farm Game/Wild Game		Honey	
	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.
B3a	146	-	69	-	92	-	34	-	97	-	12	-	24	-	44	-	-	-	9	-
B3b	136	-	59	-	72	-	22	-	97	-	2	-	-	-	29	-	-	-	9	-
B3c	121	-	39	-	60	-	61	-	58	-	2	-	8	-	-	-	100	-	15	-
B3d	36	-	15	-	14	-	115	-	115	-	1	-	8	-	-	-	-	-	-	-
B3e	-	-	-	-	-	-	-	-	-	-	-	-	64	-	-	-	-	-	-	-
B3f	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total No. Analyses	439	-	182	-	238	-	232	-	367	-	17	-	104	-	73	-	100	-	33	-

OVERALL RESULT - TOTAL GROUP A + GROUP B

Substance	Bovine		Pigs		Sheep/Goats		Poultry		Milk		Horses		Aquaculture		Eggs		Farm Game/Wild Game		Honey	
	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.	Num.	Pos.
Overall Total Analyses	9734	10	2583	1	2143	4	2265	-	1593	4	173	1	543	-	479	-	106	-	128	-

Notes

- (a) See over for key to each substance sub-group
- (b) Results are from routine targeted and on suspicion testing
- (c) Results reflect testing at primary processing plants and, where appropriate, on farm.
- (d) It is not mandatory to test for all substances in every species/product
- (e) Results for farmed game and wild game are combined
- (f) The total number of samples taken in 2020 for all food-groups was 16,196 (some samples are analysed for more than one substance).
- (g) In the case of aquaculture, 120 fish were tested in total.

Group A – (Prohibited Substances) 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) No. 2377/90 of 26 June 1990 (i.e. for which no maximum residue level could be set).

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
- B3b Organophosphorus compounds
- B3c Chemical elements
- B3d Mycotoxins
- B3e Dyes
- B3f Others

Appendix 2: Details of Non-compliant Results

Species/ Animal produce	Total No. Of Samples*	Total No. of Analyses	Total No. of Non-compliant samples*	Substance
Farmed Fish	120	626	0	N/A
Bovine	8,745	9,734	10	1 Hormone (1 Boldenone) 4 Antibiotics (1 Amoxicillin, 1 Oxytetracycline, 1 Chlortetracycline & Tetracycline, 1 Sulfamethazine) 2 Anthelmintics (2 Closantel) 2 Thyrostats (Thiouracil) 1 Corticosteroids (1 Dexamethasone)
Eggs	308	479	0	N/A
Equine	158	173	1	1 NSAIDs (Oxyphenbutazone)
Farmed Game (Deer) / Wild Game	106	106	0	N/A
Honey	84	128	0	N/A
Milk	1,407	1,593	4	4 Anthelmintics (1 Levamisole, 1 Fenbendazole and 2 Albendazole)
Ovine/Caprine	1,787	2,143	4	2 Anthelmintics (2 Closantel, 2 Thyrostats (2 Thiouracil)
Porcine	2,068	2,583	1	1 Antibiotic (Enrofloxacin)
Poultry	1,413	2,265	0	N/A
Total:	16,196	19,830	20	

*Numbers relate to samples taken on a routine targeted basis and on suspicion, including follow-up investigations.

Appendix 3

FOLLOW-UP ACTIONS FOR NON-COMPLIANT RESULTS IN 2020

Group A substances

Non-compliant results	Follow-up actions
3 non-compliant results	Bovine
<ul style="list-style-type: none"> • <i>Thyrostats-Thiouracil</i> • <i>Urine</i> • <i>2 Non-Compliant results</i> 	<p>2 target samples confirmed non-compliant for Thiouracil at the following levels:</p> <p>(1) 27.2µg/kg</p> <p>(2) 16.5µg/kg</p> <p>Investigations of Thiouracil residue positives carried out over a ten-year period at farm level did not reveal any evidence of illegal use and it was concluded that it was from dietary factors. Having consulted with the FSAI a decision was taken to only carry out on farm investigations on levels exceeding 30µg/kg⁴. Follow up investigations were initiated at farm level in 1 case >30µg/kg and no evidence of illegal use was identified. In line with scientific evidence, the Competent Authority has concluded that the residues resulted from dietary factors.</p>
<ul style="list-style-type: none"> • <i>Steroid</i> • <i>Urine</i> • <i>1 Non-Compliant result</i> 	<p>1 target sample confirmed non-compliant for Boldenone at the following level:</p> <p>(1) 0.14µg/kg</p> <p>The follow up investigation concluded that there was no evidence of the illegal use of boldenone.</p>
2 Non-compliant results	Ovine
<ul style="list-style-type: none"> • <i>Thyrostats-Thiouracil</i> • <i>Urine</i> • <i>2 Non-Compliant results</i> 	<p>2 target samples confirmed non-compliant for Thiouracil at the following levels:</p> <p>(1) 27.2 µg/kg (2) 16.5µg/kg</p> <p>Investigations of Thiouracil residue positives carried out over a ten-year period at farm level did not reveal any evidence of illegal use and it was concluded that they were from dietary factors. Having consulted with the FSAI a decision was taken to only carry out on farm investigations on levels exceeding 30µg/kg⁴. A follow up investigation was initiated at farm level in both cases and no evidence of illegal use was identified. In line with scientific evidence, the Competent Authority has concluded that the residues resulted from dietary factors.</p>

⁴The approach is contingent on the potential risk posed and would consequently be reviewed in light of any new emerging data, results and or any new guidance from the EURL/European Commission

Group B substances

Non-compliant results	Follow-up actions
<p align="center">7 non-compliant results</p>	<p align="center">Bovine</p>
<ul style="list-style-type: none"> • <i>Antimicrobials</i> • <i>Muscle</i> • <i>4 non-compliant results</i> 	<p>1 Target sample confirmed non-compliant for antibiotics at the following level:</p> <p>(1) Chlortetracycline >400µg/kg & Tetracycline 285.7µg/kg</p> <p>Full on farm investigations were completed including examination of medicines on farm and animal remedies records were carried out and appropriate advice given to the owner keepers.</p> <p>3 Suspect samples confirmed non-compliant for antibiotics at the following level:</p> <ul style="list-style-type: none"> (1) Amoxicillin >100µg/kg (2) Oxytetracycline >400µg/kg (3) Sulfamethazine >200µg/kg <p>Suspect carcasses were declared unfit for human consumption and destroyed. Full on farm investigation including examination of medicines on farm and animal remedies record was carried out. Appropriate advice was given to the farmers regarding the use of VMPs and follow-up visits were scheduled.</p>
<ul style="list-style-type: none"> • <i>Anthelmintics</i> • <i>Liver</i> • <i>2 non-compliant result</i> 	<p>2 Target samples confirmed non-compliant for anthelmintics at the following levels:</p> <ul style="list-style-type: none"> (1) Closantel >2500µg/kg (2) Closantel 2274µg/kg <p>Full on farm investigations were completed including examination of medicines on farm and animal remedies records were carried out and appropriate advice given to the owner keepers.</p>
<ul style="list-style-type: none"> • <i>Corticosteroids</i> • <i>Urine</i> • <i>1 non-compliant results</i> 	<p>1 Target sample confirmed non-compliant for corticosteroids at the following level:</p> <p>(1) Dexamethasone 0.7ng/ml</p> <p>Full on farm investigation was completed including examination of medicines on farm and animal remedies records were carried out and appropriate advice given to the owner keepers.</p>
<p align="center">1 Non-compliant result</p>	<p align="center">Porcine</p>
<ul style="list-style-type: none"> • <i>Antimicrobial</i> • <i>Muscle</i> • <i>1 non-compliant result</i> 	<p>1 Target sample confirmed non-compliant for antibiotics at the following level:</p> <p>(1) Enrofloxacin 120µg/kg</p> <p>Full on farm investigation was completed including examination of medicines on farm and animal remedies records were carried out and appropriate advice given to the owner keepers.</p>

2 Non-compliant results	Ovine
<ul style="list-style-type: none"> • Anthelmintics • Liver • 2 non-compliant results 	<p>2 Target samples confirmed non-compliant for anthelmintics at the following levels:</p> <p>(1) Closantel >2500µg/kg</p> <p>(2) Closantel 1692µg/kg</p> <p>Full on farm investigations were carried out in each case, including examination of animal remedies records. Appropriate advice was given to the flock owners and follow-up visits were scheduled.</p>
1 non-compliant results	Equine
<ul style="list-style-type: none"> • NSAID • Kidney • 1 non-compliant result 	<p>1 target sample confirmed non-compliant for NSAIDs at the following level:</p> <p>(1) Oxyphenbutazone 6.8 ng/kg</p> <p>Full on farm investigation including examination of animal remedies/records was carried out and appropriate advice given to the owner keepers.</p>
4 non-compliant results	Milk
<ul style="list-style-type: none"> • Anthelmintics • Milk • 4 non-compliant results 	<p>4 target samples confirmed non-compliant for Anthelmintics at the following levels:</p> <p>(1) Levamisole 0.11µg/kg</p> <p>(2) Fenbendazole 21.8µg/kg</p> <p>(3) Albendazole >416 µg/kg</p> <p>(4) Albendazole >384 µg/kg</p> <p>Full on farm investigations including examination of animal remedies/records were carried out and appropriate advice given to the owner keepers. Appropriate advice was given to the flock owners and follow-up visits were scheduled.</p>