NATIONAL STATUTORY SURVEILLANCE SCHEME FOR VETERINARY RESIDUES IN ANIMALS AND ANIMAL PRODUCTS: 2018

RESIDUES DETECTED ABOVE THE REFERENCE POINT TO DATE: 31 December 2018

Sample	Analysed for	No. of analyses	No. of Non-compliant samples	Reference Point µg/kg/l	Concentrations above the Reference Point µg/kg/l (more than one substance may be found in one sample)
Cattle Urine	Steroid (Screen 1)	1097	22 1 5 1 4	0.7 (male), 5 (female) N/A	0.33, 0.34, 0.37, 0.43, 0.47, 0.49, 0.53, 0.75, 1.1, 1.2, 1.9, 2.1, 3.7, 6.1, 6.8, 6.8, 7.1, 8.1, 8.4, 10, 11, 23 (alpha-nortestosterone) 0.46, (beta- nortestosterone) 0/3.85, 0.37/4.67, 2.5, 3.5, 4.9, (alpha-boldenone) 116 (αlpha- estradiol) 13, 15, 17, 17.5 (testosterone)
Cattle Urine	Zeranol	404	9 (Both substances found in 6 samples)	Presence	0.53, 0.76, 1.1, 1.2, 1.3 1.4, 1.6, 3.4, 3.8 (taleranol) 0.27, 0.43, 0.58,1.2, 1.5, 2.0 (zeranol)
Cattle Kidney	Metals	74	1	500	870 (lead)
Cattle Kidney	NSAIDS	653	1	Presence	10 (ibuprofen)
Cattle Liver	Avermectins	302	2	100	125, 220 (ivermectin)
Cattle Liver	Anthelmintics	518	3	1000	1400, 1794, 2600 (closantel)
Cattle Serum	Testosterone	320	1	Presence	0.39 (beta-testosterone)
Cattle Milk	Anthelmintics	373	2	45	61, 77 (closantel)
Cattle Milk	Avermectins	279	2	Presence	6.5,12 (ivermectin)
Fattening Cattle Urine	Steroid (Screen 1)	1165	6	0.7 (male), 5 (female)	2.2, 2.4 (alpha-boldenone) 6.0, 9.2, 18 (alpha-nortestosterone) 0.67, (beta- boldenone)
Fattening Cattle Urine	Zeranol	366	11 (Both substances found in 9 samples)	Presence	0.45, 0.60, 1.8, 2.6, 3.0 3.2, 3.4, 3.5, 3.8, 3.9, 8.8 (taleranol) 1.1, 1.4, 1.4, 1.5, 1.7, 2.3, 2.6, 3.1, 4.9 (zeranol)
Calves Kidney	Antimicrobial (Screen 1)	127	3	600 100	1600, 2300 (oxytetracycline) 330 (gamithromycin)
Calves Kidney	Antimicrobial (Screen 4)	103	2	1500	33000 (dihydrostreptomycin) 36000 (paromomycin)
Calves Kidney	Florfenicol	96	1	300	4400 (florfenicol)
Calves Liver	Coccidiostats	17	1	30	36 (halofuginone)
Sheep Kidney	Metals	51	2 3	1000 500	1300, 1300 (cadmium) 520, 530, 1900 (lead)
Sheep Kidney	Antimicrobial (Screen 1)	2060	1	600	1200 (oxytetracycline)
Sheep Kidney	Nitrofurans	241	1	500	1.4 (SEM)
Sheep Urine	Steroid (Screen 1)	494	24 1 1	Presence	1.35/4.8, 1.8/3.0, 2.1, 2.1/4.7 2.3, 2.5, 2.6, 2.7, 2.8, 2.9, 3.3, 3.4, 3.5, 3.9, 4.0, 4.0, 4.4, 4.7, 4.8, 5.0, 5.5, 6.1/5.2, 8.1, 13 (alpha-boldenone) 3.3 (beta- nortestosterone) 14 (alpha- nortestosterone)

Sample	Analysed for	No. of analyses	No. of Non-compliant samples	Reference Point µg/kg/l	Concentrations above the Reference Point µg/kg/l (more than one substance may be found in one sample)
Sheep Urine	Zeranol	109	4	Presence	1.1, 1.2, 1.6, 1.9 (zeranol) 0.68, 1.1, 1.9, 2.1 (taleranol)
Sheep Liver	Anthelmintics	1475	15	1500	1590, 1700,1700,1800, 2000, 2000, 2100, 2300, 2500, 3000, 3600, 3800, 4016, 4200, 5400 (closantel)
			1	20	31 (nitroxynil)
			1	100	130 (levamisole)
			1	1000	3800 (albendazole)
			1	150	8980 (rafoxanide)
			1	250	423(triclabendazole)*
Sheep Liver	Avermectins	454	1	100	180 (moxidectin)
Pig Kidney	Antimicrobial (Screen 2)	371	1	100	420 (sulphadiazine)
Horse Kidney	Metals	1	1	1000	7000 (cadmium)
Broiler Liver	Coccidiostats	1336	1	8	15 (monensin)
Broiler Muscle	Chloramphenicol	649	2	0.3	2.4, 2.6 (chloramphenicol)
Hen Eggs	Coccidiostats	589	1	3	27 (salinomycin)
			4	150	190, 230, 460, 790 (lasalocid)
Pheasant Muscle	Coccidiostats	5	1	5	290 (lasalocid)
Partridge Muscle	Coccidiostats	5	2	5	51, 220 (lasalocid)
Wild Deer Muscle	Metals	102	1	1000	50000 (lead)

*Sum of Triclabendazole
25 triclabendazole sulfoxide*
88 triclabendaole sulfone*

RESULTS OF FOLLOW-UP INVESTIGATIONS: 31 December 2018

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle				
Cattle Urine	Alpha-nortestosterone 0.33 µg/kg 1805273		Great Britain	A medium sized farm of cattle and sheep. Medicines records and movement records appeared to be well kept; all medicines were UK licensed and kept securely. All other animals were also inspected and there appeared to be no visual evidence of any steroidal substance used on farm. The likely cause of residue was due to natural occurrence.
Cattle Urine	Alpha-nortestosterone 0.34 µg/kg 1815152		Great Britain	A large sized farm of cattle, calves and sheep. Medicines and movement records were checked and appeared to be well kept; no deficiencies were noted in the supply, storage and use of medicines. Other animals were also inspected and there appeared to be no visual evidence of any steroidal substance used on farm. The likely cause of residues was due to natural occurrence.
Cattle Urine	Alpha-nortestosterone 0.37 µg/kg 1817773		Great Britain	A small sized farm of cattle only. Medicines records and movement records appeared to be well maintained; all medicines were UK licensed and kept securely. The result may have been due to stress as the bovine was housed overnight in the lairage before taken to slaughter the following day. The likely cause of residue was due to natural occurrence.
Cattle Urine	Alpha-nortestosterone 0.43 µg/kg 1815158		Great Britain	A small sized farm comprising of calves and cattle, around half of the herd is kept for breeding, while the other half are bought. Most of the cattle are sent for slaughter when they are around 18 months old. The positive animal had been kept on the farm since birth and remained in the lairage overnight before being slaughtered. However, excitement phase at loading, transport and unloading, may account for the presence of the nortestosterone in the urine of the castrated steer. All cattle were inspected and found with a good, but normal growth development. All medicines on site were stored appropriately and records of administered medicines seemed satisfactory, except for minor recording discrepancies. Advice was provided to the farmer on statutory requirements for record keeping. The likely cause of residue was due to natural occurrence.
Cattle Urine	Alpha-nortestosterone 0.47 µg/kg & Beta- nortestosterone 0.46 µg/kg 1809274		Great Britain	A small sized cattle farm. The farmer has his own beef herd and is also a heifer rearer, buying young stock at local markets, fattening the animals and after 12 months, selling them back through the markets. The medicine and movement records were inspected and found to be satisfactory. All medicines were appropriately stored. It is very unlikely that any hormones were administered to the animal in question. The animal had endured a long journey to the abattoir; therefore, the presence of nortestosterone could have occurred because of stress. The likely cause of residue is considered to be due to natural occurrence.
Cattle Urine	Alpha-nortestosterone 0.49 µg/kg 1817942	Rispoval Closamectin	Great Britain	A large sized farm of cattle only. The animals were kept in good clean condition and showed normal calm behaviour. The positive sample originated from a steer to which the only treatments received were Rispoval vaccine and Closamectin pour on wormer. The animal was kept in a group/pen of 40-50 other males. There was no evidence of the use of anabolic steroids, nor abnormal muscling in the resident cattle. The animal did undergo a 3-hour journey prior to slaughter, which could have contributed to stress related raised hormone levels. The medicines and movement records were checked and appeared to be satisfactory, duly completed. The likely cause of residue was due to natural occurrence.
Cattle Urine	Alpha-nortestosterone 0.53 µg/kg 1817853		Great Britain	A large sized farm of cattle and sheep, where young stock is bought, reared and sold directly to the abattoir. On inspection, there were no medical concerns and no medicinal treatments had been given to the animal in the months prior to slaughter. The long journey time from the farm to abattoir in this case, is likely to have been significant; the presence of nortestosterone in urine can be associated with stress during transportation. Medicines and movement records were checked and appeared to be well kept; no deficiencies were noted in the supply, storage and use of medicines. The likely cause of residue was due to natural occurrence.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle Urine	Alpha-nortestosterone 0.75 µg/kg 1822481		Great Britain	This is a medium sized farm, comprising of fattening cattle. Cattle are bought in as stores fattened and sent direct to slaughter. Cattle are wintered inside and fed on home-grown silage/barley/wheat and beans. Mineral supplements are bought in. All medicines on site are stored appropriately and withdrawal period details adhered to. The medicine records inspected were maintained and up to date. Routine wormers are used, but very little therapeutic treatments are needed and the animal in question, had not had any treatments since December 2017. There were no signs of any illegal drugs or hormone/steroid preparations being used. Given the journey time to the abattoir, it is likely that the residue was due to natural occurrence, caused by stress.
Cattle Urine	Alpha-nortestosterone 1.1 µg/kg 1817802		Great Britain	A medium sized dairy cattle farm. The owner had purchased the bull from the market and kept the animal for 4 days, before it was transported to the abattoir and slaughtered the same day. A combination of travel distance, waiting time and new environment could have stressed the animal (the owner had reported that the animal was stressed, additionally Hereford cattle are known to be a more stressful breed). On inspection, Medicine records were found to be satisfactorily maintained and medicines were stored appropriately, however the farmer was advised on the recording of disposal of veterinary medicines, where there was a minor non-compliance. There was no evidence of the use of banned substances on the farm, therefore the presence of the hormone is a natural occurrence.
Cattle Urine	Alpha-nortestosterone 1.2 µg/kg 1824796		Great Britain	This is a medium sized home farm, which operates mainly as a beef cattle rearer (comprising of cattle and calves on grazing land). Some of the cattle are already pregnant when they arrive on the farm (the farmer is not actually breeding them). The cattle that are bought in are beef cattle of various breeds, most of which are from the markets. The cattle are fed grass silage and minerals; no medicated feed is given to the animals. All medicines on site are stored appropriately and medicine records are maintained and up to date. The owner was advised to keep medicine records for all holdings separately (not all cattle movement was recorded properly), potential public health risk and findings were discussed with the farmer-owner of the holding. The positive steer was transported a number of miles to the abattoir and it is possible that the residue occurred due to stress. There was no evidence of the use of banned substances, therefore the presence of this hormone is a natural occurrence.
Cattle Urine	Alpha-boldenone 3.5 µg/kg & Alpha-nortestosterone 1.9 µg/kg 1817843		Great Britain	A medium sized dairy farm comprised of calves, fattening cattle and sheep. The dairy bulls leave the farm when they are 2-6 weeks old and are sold at the local auction market. The dairy heifers, calves and beef calves stay on farm. Beef animals are sold at 24 months old. The positive animal was a healthy homebred cow; however, it was bullying and had broken its right femur. It was not treated and was slaughtered on farm. The inspection concluded that all medicines were recorded in the medicine book and medicines appropriately stored. There was no evidence of the use of banned substances on the farm, therefore the presence of Alpha-boldenone is considered natural due to accidental faecal contamination of urine at the time of sampling, Alpha-nortestosterone is a steroid which is banned for the purposes of growth promotion in food-producing animals and there was no evidence of the use of this substance, therefore the presence is considered to be a natural occurrence.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle Urine	Alpha-nortestosterone 2.1 µg/kg 1817943		Great Britain	This is a medium sized farm of dairy cattle and sheep. Mixed breed store cattle are purchased through markets between 6-20 months old and fattened. The positive animal had been purchased as part of a group of Holstein Fresian steers. Some of the animals had been treated for suspected barley poisoning. With a history of requiring veterinary treatment for an illness 2 weeks prior to slaughter and the subsequent travel to the abattoir, it is likely that this steer was stressed. During the inspection, storage, correct disposal of out of date medicines and the need to maintain appropriate medicine records were discussed (some of the information was found to be missing). The owner was provided with advice of statutory requirements. The investigation established that there was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be a natural occurrence.
Cattle Urine	Alpha-nortestosterone 3.7 µg/kg 1805238		Great Britain	A medium sized cattle farm of approximately 120 (beef) cattle and sheep. Animals are tagged with management ear tags at arrival and have routine treatment for prevention of worms/fluke; all treatments are accurately recorded in the medicines book. There was no evidence of any steroidal substance used or other treatments issued to the animal within the required withdrawal period. The cause of residue was likely to have been through natural causes.
Cattle Urine	Alpha-nortestosterone 6.1 µg/l		Northern Ireland	Pregnant female. No investigation required.
Cattle Urine	Alpha- nortestosterone 6.8µg/l		Northern Ireland	Pregnant female. No investigation required.
Cattle Urine	Alpha-nortestosterone 6.8 µg/l		Northern Ireland	Pregnant female. No investigation required.
Cattle Urine	Alpha-nortestosterone 7.1 µg/l		Northern Ireland	Pregnant female. No investigation required.
Cattle Urine	Alpha-nortestosterone 8.1 µg/l		Northern Ireland	Pregnant female. No investigation required. (Urine also contained α- Boldenone free/conj 0.37/4.67 µg/l)
Cattle Urine	Alpha-nortestosterone 8.4 µg/l		Northern Ireland	Pregnant female. No investigation required.
Cattle Urine	Alpha-nortestosterone 10 µg/l		Northern Ireland	Pregnant female. No investigation required.
Cattle Urine	Alpha-nortestosterone 11µg/l 1832905		Great Britain	A medium sized well-run farm comprised of dairy cattle with a total of 200 animals. This was a homebred animal which was sent directly from the farm as an emergency slaughter (reason: down/recumbent animal). The animal had been in calf 24-48 hours before. For all milking cows, following any treatment with antibiotics and after the withdrawal period, milk is tested. The medicine records had a few omissions, but on the whole were satisfactory and medicines were stored appropriately. There was no evidence of the use of banned substances on the farm. Based on the fact that the animal was in calf and lost it, the presence of the hormone is considered to be a natural occurrence.
Cattle Urine	Alpha-nortestosterone 23 µg/l		Northern Ireland	Pregnant female. No investigation required.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle Urine	Alpha-boldenone 2.5 µg/kg 1832501	Bymectin	Great Britain	A medium sized farm, where the farmer runs an Aberdeen Angus fattening beef herd, currently 398 cattle, no breeding involved. Animals are sent fat directly to the abattoir. The animals are housed at winter and fed own produce barley and silage. Grazing is from May exclusively grass in summer. No medicated feedstuff is used. The positive animal (2-year-old male) was bought from market in October 2017 and slaughtered in October 2018. It was wormed (Bymectin) before turning out in May 2018, no other medication was used. Medicine records are kept partly computerised. The medicine records and medicine cabinet were found to be in compliance with current regulations (medicines stored appropriately). There was no evidence of the used of banned substances, therefore the presence of this hormone is natural due to accidental faecal contamination at the time of sampling.
Cattle Urine	Alpha-boldenone 0/3.85 µg/l		Northern Ireland	The animal was on farm for less than 3 days prior to sampling. No suspects on farm identified. Original farm flagged for hormone sampling. 5 follow up samples were compliant.
Cattle Urine	Alpha-boldenone 0.37/4.67µg/l		Northern Ireland	β- Boldenone is indicative of abuse and α- Boldenone indicative of faecal contamination. No investigation required as no presence of conjugated β- Boldenone. (This animal was pregnant at time of sampling; α-Nortestosterone at 8.1 µg/l was also detected.
Cattle Urine	Alpha-boldenone 4.9 µg/kg 1809304		Great Britain	This is a large closed herd dairy and beef farm. The farm breeds bulls and sells occasional pedigree bull. The animals were found to be kept in good clean condition and showed normal calm behaviour. The beef cattle were fed whole crop rolled barley mixed (on farm) with beef nuts concentrate. The sample originated from a male which was kept in a group/pen of 20 other males. There were no signs of steroids administration or abnormal muscling. The medicines records were inspected and were found to be satisfactory, duly completed (electronically kept). The farmer was advised to ensure that withdrawal periods are observed to avoid cross-contamination, also to double check the target species and dosage. The most likely cause of this residue is from faecal contamination at the time of sampling or natural occurrence.
Cattle Urine	Testosterone 13 µg/l		Northern Ireland	No investigating visit was undertaken as the animal concerned was a bull. Bull animals can produce high physiological levels of this hormone.
Cattle Urine	Testosterone 15 µg/l		Northern Ireland	No investigating visit was undertaken as the animal concerned was a bull. Bull animals can produce high physiological levels of this hormone.
Cattle Urine	Testosterone 17 µg/l		Northern Ireland	No investigating visit was undertaken as the animal concerned was a bull. Bull animals can produce high physiological levels of this hormone.
Cattle Urine	Testosterone 17.5 µg/l		Northern Ireland	No investigating visit was undertaken as the animal concerned was a bull. Bull animals can produce high physiological levels of this hormone.
Cattle Urine	Taleranol 0.53 µg/ kg 1833078		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Cattle Urine	α Estradiol 116 µg/l		Northern Ireland	Animal was from a beef herd of 110 animals for finishing. No abnormalities detected on visual inspection of animals. 5 follow up samples were compliant.
Cattle Urine	Taleranol 0.76 µg/ kg & Zeranol 0.27 µg/ kg 1809642		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Cattle Urine	Taleranol 1.1 µg/ kg 1809685		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Cattle Urine	Taleranol 1.2 µg/ kg & Zeranol 2.0 µg/ kg 1818178		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle Urine	Taleranol 1.3 µg/ kg & Zeranol 0.43 µg/ kg 1833060		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Cattle Urine	Taleranol 1.4µg/ kg 1825063		Great Britain	A medium sized farm with a large sheep flock of approximately 800 ewes and a dairy cattle herd of 490. Medicine records were inspected and found to be kept in accordance with statutory requirements. All medicines stored were either antibiotics or anti-inflammatory medicines, all correctly labelled and none were out of date. The identified animal had previous problems with one foot and was treated with copper sulphate. It was kept in a pen with another 6 cows and fed home produced grass silage and rolled barley. Some of the grass silage was produced in 2017; on inspection the last few bales of grass silage stored were found to have extensive mould. The farmer was advised not to feed animals silage contaminated with mould. There was no evidence of the use of banned substances on the farm. Taleranol is a fungus in the Fusarium family therefore; the most likely cause of residue is from fungi-infected feed.
Cattle Urine	Taleranol 1.6 µg/ kg & Zeranol 0.58 µg/ kg 1825034		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Cattle Urine	Taleranol 3.4 µg/ kg & Zeranol 1.5 µg/ kg 1825032		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Cattle Urine	Taleranol 3.8 µg/ kg & Zeranol 1.2 µg/ kg 1825055		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Alpha-nortestosterone 6.0 µg/k 1811491		Great Britain	Pregnant female. No investigation required.
Fattening Cattle Urine	Alpha-nortestosterone 9.2 µg/k 1822025		Great Britain	Pregnant female. No investigation required.
Fattening Cattle Urine	Alpha-boldenone 2.2 µg/kg & Alpha-nortestosterone 18 µg/kg 1811436		Great Britain	Pregnant female. No investigation required.
Fattening Cattle Urine	Beta-boldenone 0.67 µg/kg & Alpha-boldenone 2.4 µg/kg 1821997		Great Britain	A medium sized farm of cattle and sheep (100 bulls and 1300 sheep), together with some Highland cattle. Bull fattener – are purchased calves at a few weeks old, reared until 8-9 months, then usually taken for slaughter direct to abattoir. Occasionally, cattle are bought from the markets. The 1300 in lamb ewes are mixed breeds, due to lamb in April onwards when most will be housed. The owners purchase medicines from private vets (usual medicines are those you would expect on a farm where young cattle are sourced from other farms – pneumonia and calf scour treatments). Feed is ready mixed, protein mixes, mineral mixes, molasses and raw barley. The cattle are bedded on paper waste; some of the animals nibble it if they are bored. On inspection, (where the fattening cattle are housed), there were no signs of any animals with conformation changes or abnormal muscling. The animal sampled (Holstein Friesian bull) showed elevated levels of alpha and beta boldenones. There was no evidence of the use of banned substances, therefore the presence of these hormones is natural due to faecal contamination of the urine at the time of sampling.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle Kidney	Lead 870 µg/kg 1819246		Great Britain	This is a small sized organic farm dairy farm. This is a closed herd; no cattle are bought in, with the exception of one stock bull. Heifer calves are reared in pens until 10-12 weeks of age. No medicated feeds are used. There is a mains water supply to the premises, however, there are no lead pipes on the property and no issues were observed during the inspection. Animals were in good health and had received no treatment. The positive animal was homebred and had been fattened on spring grass, when housed it was fed hay silage and straw. At inspection, verbal advice was given, and information provided on how to stop lead poisoning on farm. Advice covered the risk of naturally high levels of lead in soils, contamination by waste/fly tipping (batteries in particular) and the avoidance of overgrazing in particular areas/fields. The investigation could not establish any potential sources of environmental contamination locally, however, heavy metals can accumulate in the kidney of animal's subject to low level exposure over time and this is likely to be the cause of residue.
Cattle Kidney	Ibuprofen 10 µg/kg 1825810	Norfenicol	Great Britain	A medium sized cattle farm. The farmer has his own homebred suckler herd in addition to buying in steers and heifers, various breeds are kept. The animal was born on the holding in spring 2017 and taken to the abattoir in summer 2018. It had not been moved anywhere else during its life. It had been treated with Norfenicol in December 2017. Withdrawal periods were observed. The farmer uses computer software which records each event in an animal's life including medications, including quantity of stock medication with batch numbers. Medicines are not kept in stock, apart from wormers and the farmer contacts the vet for doses where necessary. An excellent recording system was found, together with secure storage for medicines. The investigation was unable to establish a source for this residue.
Cattle Liver	Ivermectin 125 µg/kg	Ivomec Super	Northern Ireland	The animal is from a herd of 123. There are also sheep on the farm. The animal was purchased on 16/11/18, this is the same day it was administered Ivomec super. On 26/11/18 this animal was found to be TB reactor and was taken for slaughter on 6/12/18 (recommended withdrawal is 66 days). The herd keeper takes animals to abattoir on a weekly basis and therefore does not usually treat them. However, on this occasion as the animal was a TB reactor they had not considered the time of treatment and forgot to include this information on the FCI. 5 follow up samples were compliant.
Cattle Liver	Ivermectin 220 µg/kg 1810250	Paramectin	Great Britain	This farm is comprised of beef cattle, fattening cattle and sheep. A mixture of breed, mostly Lim cross, Hereford cross, British Blue cross and Charolais cross. Cattle had been treated with Paramectin 0.5% Pour on Solution, leaving an interval of 75 days before being sent for slaughter. The owner did not follow the instructions for use provided on the label of the product. Instead, he mixed the product with water and sprayed it over the cattle leading to an inadequate dosage of medicine to be received by the animals. Medicine records were tidy and in order and medicines stored appropriately. Animals were in good condition. The investigation established that the likely cause of residue was an inadequate method of product use. The owner has been advised to follow the instructions of the producer of each medicine in future.
Cattle Liver	Closantel 1400 µg/l	Closamectin	Northern Ireland	This animal was taken as a TB reactor. It was transported to slaughter by DAERA haulier mixed with reactors from other herds. It had been dosed with closamectin 44 days prior to slaughter – withdrawal period is 28 days. One follow up sample was compliant.
Cattle Liver	Closantel 1794 µg/kg	Closamectin	Northern Ireland	Herd keeper used closamectin pour on formulation on the 17/01/18 and slaughtered on 26/02/18. The withdrawal period for this produce is 28 days. According to veterinary officer the only explanation is that herd keeper did not weigh before dosing therefore, in theory, he may have overdosed. All follow up samples compliant.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle Liver	Closantel 2600 µg/kg 1815318	Closamectin	Great Britain	A medium sized farm comprised of approximately 50 cattle in addition to a sheep herd (around 1000). All medicines are supplied by the registered vet; records within the last 5 years were retained and updated. Movement records of the cattle were found to be satisfactory. Cattle were dosed almost 5 months before slaughter with Closamectin. All regulations and recommendations appear to have been adhered to. The investigation established that the likely cause of residue was a possible overdose and subsequent slaughter whilst within a withdrawal period. The owner was advised of statutory requirements for withdrawal periods and record keeping.
Cattle Serum	Beta-testosterone 0.39 µg/kg 1818166		Great Britain	This is a large sized dairy farm with around 1600 bovine. Home bred dairy herd with commercial stock are milked twice a day, medium yielding. The calving period is all year. Calves are kept on cows for 48 hours and then fed with whole unpasteurized milk. Medicines are stored appropriately; medicine records are updated each day and transferred weekly to a file on the computer. Movement records were satisfactory. The animal was confirmed to be in calf and was the subject of TB testing at the time of sampling. There was no evidence of the use of banned substances on the farm, therefore the presence of this hormone is considered to be a natural level.
Fattening Cattle Urine	Taleranol 0.45 µg/ kg 1822302		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 0.60 µg/ kg 1822299		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 3.0 µg/ kg & Zeranol 1.7 µg/kg1800636		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 1.8 µg/ kg & Zeranol 1.1 µg/kg 1811874		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 2.6 µg/ kg & Zeranol 1.4 µg/kg 1822287		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 3.2 µg/ kg & Zeranol 3.1 µg/kg 1822286		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 3.4 µg/ kg & Zeranol 1.4 µg/kg 1822280		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 3.5 µg/ kg & Zeranol 2.3 µg/kg 1822307		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 3.8 µg/ kg & Zeranol 1.5 µg/kg 1822283		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Fattening Cattle Urine	Taleranol 3.9 µg/ kg & Zeranol 2.6 µg/kg 1822292		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Fattening Cattle Urine	Taleranol 8.8 µg/ kg & Zeranol 4.9 µg/kg 1822325		Great Britain	Low levels of zeranol and fungal metabolites may be present in the urine of animals that have ingested feeding-stuffs contaminated with the fusarium fungus. At this level of residue, a statistical model based on research has confirmed this to be the case. No further investigation was required.
Calves Kidney	Dihydrostreptomycin 33000 µg/kg 1810803		Great Britain	A large cattle farm of approximately 1032 in number. The farm is located in a high-risk Bovine Tuberculosis (TB) area. The farmer explained the farm employees have access to the medicines. A procedure is in place for the employees to electronically inform as soon as possible any medicine administered to ensure the treatment is recorded in the treatment book. The farmer was not informed the positive calf had been treated; the withdrawal period was therefore not observed.
Calves Kidney	Oxytetracycline 1600 µg/kg 1810781		Great Britain	A medium sized farm comprised of around 700 dairy cattle (approximately 420 milking cows). Calving takes place all year round. Heifer calves are reared as replacements and bull calves are sold about 20-30 days old. In January 2018, heifer calves were treated for pneumonia, but bull calves would not have been treated. The farm manager's opinion was that the male calf was treated by mistake - there was no record of this treatment. The farm has introduced a new computer system where all information is added to the system and can be retrieved when needed. However, since the animal is no longer on the farm, no computer records have been retained. During the investigation, 3 bottles of Hexasol had to be removed from the fridge, as they had been opened for a length of time going over the use time after broaching. The manager was aware the bottles needed to be disposed of but had placed them at the bottom of the fridge with no indication that they were not to be used. A record of broaching date is now kept, medicines are removed from storage once over the use time after broaching and placed in a "to be disposed of" container. This is indicated in the laminated sheets that are now next to the medicine cabinet. The farmer also consulted the PVS on issuing laminated sheets where the treatment protocols are now displayed next to medicine storage. The likely cause of residue was an unrecorded treatment and subsequent slaughter of the animal whilst within a withdrawal period.
Calves Kidney	Oxytetracycline 2300 µg/kg 1819280	Alamycin	Great Britain	The positive animal was born on farm, sold at market and sent to slaughter 4 days later. A batch of animals had been treated with Alamycin on the farm. The farmer stated that as a bull calf, the animal would not have been treated routinely, it was also being fed discarded milk containing Tylan and Tetra delta residue. Though these products contain antibiotics, they did not contain oxytetracycline. No record of treatment on the farm for this calf was found. Farm records for animals using Alamycin recorded the meat and milk withdrawal as a dash. Animal IDs on the records were partial. It would appear that the calf was treated at some point while on the farm, as the antibiotic is present and in use on the farm. This use was not recorded, therefore a withdrawal period could not be observed, as a presale check of the record would indicate no treatment had been given. The investigation established that the likely cause of residue was a treatment prior to purchase of the animal (unrecorded treatment and subsequent slaughter whilst within a withdrawal period).
Calves Kidney	Gamithromycin 330 µg/kg 1819300		Great Britain	A small sized farm comprised of cattle. The farmer is a dealer and buys calves on market for other people, mainly beef crosses which are directly moved to the client premises from the market. The farmer also buys dairy cross calves and does not keep medicines on the holding. The positive animal was a calf, which was sent to market and subsequently sent to slaughter. The farmer advised that he did not keep medicines on the holding, as animals do not spend enough time there and had not been in the situation of having to medicate any of the cattle. On later investigation, it was clear that medicines had been prescribed by private vet; however, the farmer did not keep appropriate records of medicines prescribed and did not disclose that he had another holding where medicines could be purchased. The farmer was provided advice and guidance on requirements for record keeping. The source of residue could not be established.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Calves Kidney	Florfenicol 4400 µg/kg 1810836	Florkem	Great Britain	A medium sized dairy cattle farm. This was a joint inspection with Trading Standards. The farmer immediately claimed responsibility for the positive calf and admitted he sometimes treats calves for pneumonia with Florkem (contains florfenicol). Generally speaking medicines stock and storage was satisfactory, the main issue being the medicines record keeping for the calves. The farmer expressed his thankfulness in highlighting the problem. The farmer was reminded of the legal requirements regarding the recording of veterinary medicines and withdrawal periods. The farmer agreed to start recording calf treatments in a separate medicines book. The case has been referred to the Rural Payments Agency.
Calves Kidney	Paromomycin 36000 µg/kg 1828694		Great Britain	A male calf was sampled which tested positive for Paromomycin and an investigation was carried out. With the evidence available to the inspector, including the involvement of a dealer submitting the animal for slaughter, it was difficult to ascertain where the breach occurred. The farmer had no knowledge of the detected medicine ever being used on the farm (medicine records and invoices support the lack of purchase of any medicinal product containing this active ingredient). The farmer's private veterinary surgeon confirmed the farm had not used or obtained this medicine from their practice at any point in the last 5 years and the farm did not have a significant calf scour problem (the main reason this medicine might be used for). It was not possible to establish the source of residue during the initial investigation. Further investigations are necessary.
Calves Liver	Halofuginone 36 µg/kg 1828737		Great Britain	A medium sized farm comprised of sheep and cattle. The male Friesian calf was purchased at auction. The calf was taken for slaughter 4 days later. The food chain information accompanying the calf, when sold at market, indicated that medicine withdrawal periods had been observed. Medicine records were inspected; software is used to record movement details and medicines that have been used. Records appeared to be well kept, but show the last medicine used was in 2014. This is consistent with information given in previous investigations. Computer records appear well managed. The farmer buys large number of calves from different holdings and slaughters them within a short time of purchase. The farmer does not use veterinary medicines. The fridge where any medicines would be stored was inspected and found to be empty. The owner purchased the calf with an FCI indicating that no medicine withdrawal period needed to be observed. Advice was given that the owner continues ensuring that FCI are obtained for animals purchased and withdrawal periods are observed. The likely cause of residue is the animal was sent for slaughter within a withdrawal period.
Sheep				
Sheep Kidney	Cadmium 1300 µg/kg 1817760		Great Britain	A medium sized farm of 240 breeding ewes, 30 lambs, suffolks and texels, 99 beef cattle at the time of the investigation. The farm usually produces 300-350 lambs per year, ewes are moved off from the farm to market and lambs through a dealer. One of the animals moved through market had the same flock number as the positive sheep, so there is a possibility the animal was double tagged with different numbers, so different numbers were read by the farmer/market. Ewes and lambs were grazing in the fields around the farm where there was no industrial or mining activity. The inspector checked feed provided to the cattle herd, but sheep had no access to it and it did not have cadmium in the composition. Fertilizer used could contain cadmium as an impurity in phosphate rock. It was not possible to identify the sheep on farm records, so not possible to know where the animal was grazing previous to this farm. The farmer was advised to seek professional advice when applying fertilizers to the ground and advised of the importance of recording information correctly (i.e. ear tag numbers). The most likely cause of residue is accumulation of cadmium through diet (ingestion of plants with high levels of cadmium, or ingestion through the respiratory system because of a polluted environment).

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Kidney	Cadmium 1300 µg/kg 1835280		Great Britain	A large farm comprised of 1400 breeding ewe and 44 beef cattle. Sheep (mainly homebred) are kept inside during the winter and graze during the summer. The sampled animal was at least 7 years old. According to the farmer, up until the 80's, it was common to spread sewage sludge in the area. At that time, there were reports stating that the soil had high levels of Cadmium. In spring 2018, the farmer found 2 abandoned car batteries in the area, these were removed and disposed of. It is possible that the positive sheep had been grazing in the fields where the batteries were found. The investigation established there were potential sources of environmental contamination of the soil and water locally. Research has shown that heavy metals can accumulate in the kidney of animal's subject to low level exposure over time and this is likely to be the cause in this case, (i.e. possible accumulation of cadmium through environmental contamination).
Sheep Kidney	Lead 520 µg/kg 1807943		Great Britain	A large farm comprised of sheep and pigs. The positive animal was a male sheep 6-12 months old. All the animals were inspected and looked bright and alert with no signs of lead intoxication. The animal had been housed for 2 months or more before it was sent to slaughter. All sheds, pens, feed mixer and farming material were found in good condition. There was no evidence of old paint, batteries or products which might have been the origin of the residue. Fields where the animals had grazed the previous summer were the same ones the farmer had been using since he started farming. Medicine records were up to date at the time of the inspection. A lead poisoning leaflet was handed to the farmer and discussed. The source of residue was not established.
Sheep Kidney	Lead 530 µg/kg 1817753		Great Britain	This is a large sized farming enterprise of cattle, sheep and moorland ponies. The animal was part of a group of 84 sheep sent to the abattoir from the farm. The group were taken to rented fields (these are used for shooting) before going to the abattoir, and there was little grass available. It is possible that the positive animal may have ingested lead pellets while grazing. There were no other possible origins of lead found. Some level of contamination could have happened at the farm of origin, given that shooting is also done on that premises. The farmer was advised to look for other means to deliver supplementary feed that would minimize possible ingestion of soil. The investigation established that there were potential sources of environmental contamination of soil and water locally.
Sheep Kidney	Lead 1900 µg/kg 1817762		Great Britain	A medium sized family run sheep farm (approximately 500 ewes and 700 lambs). The main premise address is a cattle fairy farm a few miles away. The owner buys sheep mainly from market to fatten on the farm; the majority of animals are sold directly to the abattoir. A few females might be sold to breeders. No lambing occurs on the farm and animals are grazed outside all year. The farm is located in an area that has a long-term association with lead mining; levels of lead contamination are known to be high in the area. The possibility of lead intake via the soil is likely, especially during times of high rainfall. All fields were appropriately fenced and had adequate water supply. The investigation could not establish any potential sources of environmental contamination of the soil and water locally. However, heavy metals can accumulate in the kidney of animal's subject to low level exposure over time and this is likely to be the cause of residue in this case.
Sheep Kidney	SEM 1.4 µg/kg 1815835		Great Britain	This is a medium sized farm comprised of beef cattle, sheep and goats. The majority of sheep are taken to slaughter within 1-3 weeks of being purchased and this was the case with the sheep in question. It did not receive any treatment. Following investigation and interview with the farmer, the inspector concluded that residue identified in the animal was already present when the farmer purchased the animal. The animal was purchased from the market 2 days before the slaughterhouse sample was taken. A further back trace of the animal is now required. Advice was given on record keeping and the retention of records to consolidate understanding of correct procedures.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Kidney	Oxytetracycline 1200 µg/kg 1834929	Alamycin LA	Great Britain	A well-managed medium sized farm comprised of sheep. The farmer had observed the recommended withdrawal period given for Alamycin LA. However, the dose given to 4 lambs was likely to be more than the recommended dose, so the stated withdrawal period is not valid. All medicine and movement records (including storage of medicines) were compliant with current legislation. This incident appears to be due to human error in administering the incorrect dose and not realising the withdrawal period may differ from the recommended time if a higher dose of a medicine is given. The owner is fully committed to ensuring this does not happen again by dosing his sheep according to weight and ensuring they are not sent for slaughter, so soon after the withdrawal time has ended. The individual ID of the positive lamb is unknown; however, it is possible it was the smaller lamb, in which case the Alamycin given is an overdose. This combined with a short interval between the withdrawal period ending and slaughter could explain why the residue was found. It seems the animal received more than the required dose which led to this non-compliance.
Sheep Urine	Alpha-boldenone 1.35/4.8 µg/l		Northern Ireland	β- Boldenone is indicative of abuse and α- Boldenone is indicative of faecal contamination. No investigation is required as no presence of conjugated β- Boldenone.
Sheep Urine	Alpha-boldenone 1.8/3.0 µg/l		Northern Ireland	β- Boldenone is indicative of abuse and α- Boldenone is indicative of faecal contamination. No investigation is required as no presence of conjugated β- Boldenone.
Sheep Urine	Alpha-boldenone 2.1 µg/kg 1827358		Great Britain	This is a large farm comprised of beef cattle, sheep, breeding pigs, poultry, geese and horses. Lambs are reared with their mothers on mixed pasture land. Only orphan lambs or twins not fed by their mothers are fed concentrate; however, this was not the case for the group of lambs in question. Stock was cared for to good standards and veterinary medicine record keeping in general was very good, apart from small omissions. Movement licences and the movement book were checked. Requirements for recording more detailed individual ID when administering veterinary medicines was discussed. The investigation established that there was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination at the time of sampling.
Sheep Urine	Alpha-boldenone 2.1/4.7 µg/l		Northern Ireland	β- Boldenone is indicative of abuse and α- Boldenone is indicative of faecal contamination. No investigation is required as no presence of conjugated β- Boldenone.
Sheep Urine	Alpha-boldenone 2.3 µg/kg 1815508		Great Britain	The sheep came from an accredited farm of approximately 400 sheep. The sheep are kept out at grass and receive some fattening cake over winter whilst supplemented with HVS Liquid Sheep before tupping. The medicine book was up to date and the farm appeared to be well run; there was no indication of any steroidal substance use on farm and the likely cause of residue was attributed to the faecal contamination of the sample.
Sheep Urine	Alpha-boldenone 2.5 µg/kg 1805758		Great Britain	A large farm of circa 260 sheep. The medicines cabinet, medicines records, mortality records and movement record books were all inspected and appeared to be well-kept. There was no evidence of any steroidal substance used on farm and the cause of residue was likely to have been due to faecal contamination.
Sheep Urine	Alpha-boldenone 2.6 µg/kg 1827381		Great Britain	This is a small size sheep and beef rearing enterprise, with some trading of fat lambs from local auctions directly to slaughter. Home bred sheep are grazed locally on farm land, where red clover appears to be one of the most commonly found plant species. The medicine records were inspected for both sheep and cattle, no entry appeared to have been made for 2018, as there were no health issues to be addressed. All medicines storage appeared to be satisfactory and compliant. There were expired medicines, kept separate and marked. There was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Urine	Alpha-boldenone 2.7 µg/kg 1815517		Great Britain	A medium sized sheep breeding enterprise (approximately 500 ewes). There are dairy and beef cattle grazing on the premises. Store lambs are bought between September and January, ewes are kept 3-4 years before being sold and replaced with shearlings. The positive animal was a male lamb less than 6 months old. All inspected animals looked normal with no abnormal muscling. The owner keeps very detailed and thorough medicine records and adheres to the withdrawal periods. All medicines are stored correctly away from the animals. There was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.
Sheep Urine	Alpha-boldenone 2.8 µg/kg 1832706		Great Britain	This is a medium sized farm of beef cattle, sheep, pigs and poultry. A detailed tracing investigation had been necessary to confirm the origin of the animal. Movement records were checked and confirmed that a second location was linked to the farm. The sheep sampled had come from a lot that was moved, movement records confirm this. The sampled sheep has spent most of its life grazing on the hills. No horses are kept on the farm, no steroids or suspicious products were detected. No medicines that contain the substance under investigation are approved for sheep or any other species present at the farm. There is no evidence or obvious sign of illegal substance use on this farm. For sheep: mainly worm fluke and scab treatment are recorded. No out of date medicines have been retained; the farmer buys and uses what is needed before expiry date. The source of residue is likely to be a combination of natural level (male, not castrate) and contamination. Traceability issue was discussed with the farmer and he acknowledged the importance of having all paperwork in good order.
Sheep Urine	Alpha-boldenone 2.9 µg/kg 1827386		Great Britain	This is a small farm with 150 acres of land, 51 cattle (27 adults and 24 calves). There are also 330 ewes that represent the main source of income for the farmer. The sheep had been grazing on fields with grass mixed with clover until mid-September. A complementary feed is used in the farm (composition: barley, palm kernel, sunflower meal feed stocks, wheat feed, maize distillers, molasses, maize, rapesfed meal feed stocks, calcium carbonate, wheat, sodium chloride, fat, ammonium chloride, sulphur). On inspection, the farmer showed very impressive management skill and knowledge. All veterinary medicines used are recorded, withdrawal periods adhered to and medicines stored appropriately. There was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.
Sheep Urine	Alpha-boldenone 3.3 µg/kg 1827359		Great Britain	A small sized farm comprised of sheep. The main family farm has another holding where there are sheep, cattle and horses. Medicine records for both are kept at the main farm. The positive lamb was kept on the small holding for a few weeks before being sent to slaughter. Inspection of farm buildings and locked medicine store showed very little use of any prescribed medicines, a few anthelmintics were present. The owner was given advice regarding the purchase of medicines jointly between two holdings (i.e. veterinary medicines are prescribed for specific livestock on a specific holding by the veterinary surgeon and the prescribed supply cannot be used for livestock on another holding). There was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Urine	Alpha-boldenone 3.4 µg/kg 1815518		Great Britain	A medium sized farm of beef cattle and sheep. The sheep are normally kept outdoors all year round and the lambing takes place outdoors. The total number of sheep currently being kept is 3000 ewes, these are also kept at the nearby common; lambing takes place outdoors and the lambs normally only get castrated around the beginning of the lambing season. Lambs are normally kept on grass through most of their life and there is no use of medicated food at the premises. There is normally little involvement of vets with the farm as most of the treatments which the animals receive are routine (dipping, drench etc.). All relevant information is recorded in the medicine books and these are kept up to date. All medicines are stored appropriately. There was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.
Sheep Urine	Alpha-boldenone 3.5 µg/kg 1815564		Great Britain	A small farm comprised of 290 sheep (180 lambs, 110 ewes). The sheep are fed with hay in winter and grazing in summer. The sample originated from a female homebred sheep 6-12 months of age born at the farm. The medicine records were inspected and found to be incomplete; batch numbers and full ID of the animals treated were missing. The farmer was advised to record veterinary medicine batch numbers and full animal ID, to ensure that withdrawal periods are being observed, to avoid cross-contamination and to double check with the veterinary surgeon target species and dosage. There was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.
Sheep Urine	Alpha-boldenone 3 9µg/kg 1827318		Great Britain	This is a small sized sheep enterprise, trading fat lambs from local auctions directly to slaughter. The purchased lambs are grazed locally on farm land, where red clover appears to be one of the most commonly found plant species. The inspector discussed the findings of residues in an animal sent for slaughter from the owner's holding, shortly after purchase from the market. Medicine records for both sheep and cattle were requested (no entry appeared to have been made for 2018), as there was no health issue addressed, according to the farmer. Older medicine records had been lost in a fire, 2 years previously. No veterinary medicines are kept on site (due to the short permanence on farm of the lambs, which get traded within days, no health issues arise). There was no evidence of the use of banned substances. On the basis of these findings, it is most likely the residue has arisen following faecal contamination of the sample, or from the metabolism of sterols from certain plants.
Sheep Urine	Alpha-boldenone 4.0 µg/kg 1827297		Great Britain	The owner keeps 29 sheep, 5 ducks, 3 turkeys and 1 goose. Sheep feeding is based on grazing and hay supply. The positive sample was taken from a 17-month-old sheep, uncastrated male. There was no evidence of the use of illegal substances on the farm. Therefore, the likely cause of residue is endogenous origin - faecal contamination.
Sheep Urine	Alpha-boldenone 4.0 µg/kg & Alpha-nortestosterone 14 µg/kg 1827363		Great Britain	This is a medium sized fattening cattle and sheep farm. The positive animal was homebred. It was transported by the owner to market in a group of 35 sheep and sold the same day to the abattoir (transport organised by the market), where it was slaughtered the following day. During the investigation, no evidence was found that testosterone products were kept, purchased or administrated to any animals. The medicine store and medicine records were inspected and found to be compliant. Remaining sheep from the same management group were inspected and no evidence of hormonal treatment was seen. It is likely that the residual levels detected were either due to failed castration, cross-contamination at the point of sampling in the abattoir, or from metabolised plant sterols (natural levels and faecal contamination). The farmer was given appropriate advice.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Urine	Alpha-boldenone 4.4 µg/kg 1834597	Benzimole	Great Britain	A medium sized farm comprised of calves, beef, fattening cattle and sheep, rearing their own replacement. The 8-month-old lamb was born on farm, kept for 8 months, then sold (Store lambs and cattle are sold to local markets and also direct to slaughter. Sheep are grazed and fed separate from the cattle. Animals were kept in good clean condition and showed normal calm behaviour. Lambs were grazing and post weaning, they received lamb finisher nut supplements. Benzimole 25mg//ml SC Oral suspension was administered to the animal on farm. According to the data product sheet for this product, there is a 5-day withdrawal period for meat. During the investigation, there was no sign of steroid administration, or abnormal muscling noticed in the resident animals. The medicine records were inspected and found to be satisfactory, duly completed. There was no evidence of the use of anabolic steroids, therefore the most likely cause of this residue is from faecal contamination at the time of sampling or other endogenous (natural) origin. The farmer was advised to ensure withdrawal periods are being observed, to avoid cross-contamination and to double check with the PVS, the target species and dosage.
Sheep Urine	Alpha-boldenone 4.7 µg/kg 1805828		Great Britain	A medium sized beef cattle and sheep farm. Store lambs are not homebred. The animal that tested positive (purchased store lamb) had been on farm for 3 months. The farmer normally transports the lambs to the slaughterhouse. However, on this occasion he sold them to a different abattoir. The lambs were taken via a collection centre and then sold directly to the abattoir. On inspection, all medicine records were found to be satisfactory and veterinary medicines were stored on site appropriately. The investigation established that there was no evidence of the use of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.
Sheep Urine	Alpha-boldenone 4.8 µg/kg 1827321		Great Britain	A medium sized farm comprised of cattle, sheep, pigs and turkeys. The medicines store showed very limited use of any POM-V and this was reflected in the medicine records. Inspection of the fields, where the lambs were grazed and the shed where the lambs were housed overnight, were unremarkable. No food stored there at all and no medicine storage was present. The owners were aware that any medicated feedingstuffs should be recorded in the medicine records. Disposal of out of date medicines were discussed. The investigation established that there was no evidence of the use of banned substances on the farm, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.
Sheep Urine	Alpha-boldenone 5.0 µg/kg 1815584		Great Britain	A traditional small-medium sized grassland farm with sheep (140 ewes, plus lambs) and cattle. The ram lamb sampled (born in January), was sold at market. During February, March, April there were periods when this animal would have been at grazing and other periods where it was re-housed due to significant snow. During April, the lamb had access to concentrate feed. Medicine records were kept up to date, administration and purchases were recorded separately. The medicines cabinet contained in date UK authorised medicines (antibiotics, NSAID, vaccines, wormers, fly strike prevention) and were stored appropriately. There was neither indication nor suspicion of presence of anabolic steroids. The investigation established there was no evidence of the used of banned substances, therefore the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.
Sheep Urine	Alpha-boldenone 5.5 µg/kg 1827395		Great Britain	This medium sized farm consists of mainly sheep and broiler breeds. The positive animal came from a group of mule crosses, which had been selected for culling after lambing in 2018. They had been grazing at the same place they graze each year with the rest of the sheep (1500 breeding ewes). They received no treatment out of the ordinary, nor were they grazing different pasture than usual. There was no suspicion of unauthorised use of illegal drugs, a private vet supplies all the medicines on farm and records were found to be satisfactory. The likely cause of residue is due to natural occurrence or faecal contamination at the time of sampling.
Sheep Urine	Alpha-boldenone 6.1/5.2 µg/l		Northern Ireland	β- Boldenone is indicative of abuse and α- Boldenone is indicative of faecal contamination. No investigation is required as no presence of conjugated β- Boldenone.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Urine	Alpha-boldenone 8.1 µg/kg 1834598		Great Britain	A small farm comprised of 75 sheep, homebred commercial animals. A sheep was traced that identified with alpha-boldenone. The sheep was taken to the slaughterhouse in October. During the investigation, the animal movement records were inspected. Although the records were not very well organised, they were available to view, no medicines used. The farmer keeps the sheep at grass all year round; sheds are available for the lambing season. The only food available for these animals is grass, no minerals or proteins are given. There was no evidence of the use of steroids at this premises, no drugs were found. It is most likely the residue has arisen following faecal contamination of the sample or other endogenous origin (plants where the sheep are grazing).
Sheep Urine	Alpha-boldenone 13 µg/kg 1815556		Great Britain	A large sized farm comprised of beef cattle and sheep (over 3000 in flock) commercial sheep enterprise. The farmer buys and sells sheep for meat or breeding on a regular basis, dependant on the time of year. The ram was purchased in March 2018 from market in a pen of 3 rams. Rams are kept on land of 20 acres. A road had recently been put through the fields for building works, following this, pasture was reseeded. The rams were fed on grass only, with no concentrates. All movement records and medicines were in order and up to date. Medicines were stored correctly and were appropriate for the species on the farm. There was no evidence of the use of banned substances, therefore, the presence of this hormone is considered to be natural due to accidental faecal contamination of the urine at the time of sampling.
Sheep Urine	Beta- nortestosterone 3.3 µg/l		Northern Ireland	An investigation was completed on 06/04/18. The positive animal could not be identified; however, it would have been on farm approximately 6 months. The flock is well managed and record keeping is of a high standard. There is no explanation for the result. 5 follow up samples were compliant.
Sheep Urine	Taleranol 0.68 µg/ kg & Zeranol 1.1 µg/kg 1827419		Great Britain	A small farm comprised of sheep (172 ewes, 32 gimmer lambs, 5 tups) along with 3 horses on 67 acres of grassland. Most replacements are homebred, although occasionally pedigree replacements and tups are bought in. Lambing occurs indoors during March. Supplementary feeding is commercially purchased for ewes and creep for lambs. Fattening lambs are sold before the end of November. Breeds include mainly Texel and Suffolk crosses. 38 sheep were loaded from the premises and taken direct to slaughter. The load contained mixed sexes and some entire/castrated sheep. Management and recording were found to be of a high standard. There was no evidence of the use of banned substances on the farm. Zeranol and taleranol are fungi in the Fusarium family; therefore, the most likely cause of residue is from fungi-infected feed, although the source could not be established.
Sheep Urine	Taleranol 1.1 µg/ kg & Zeranol 1.2 µg/kg 1834629		Great Britain	A small sized farm comprised of breeding ewes, poultry and horses. The farm is approximately 60 acres and has extensive grazing. Willow and ash trees are situated along the stream, sheep occasionally eat the tree leaves and willow bark. Lambing takes place in an open shed. Hay bales are piled up opposite the lambing pens. Tupping takes place from late August and beginning of September. There is only 1 ram for the whole of the flock. The premises produce hay which is mainly offered to the horse owners, hay is offered to ewes in the lambing pen. Hay is stored in a high covered shed with an open side providing good aeration. Supplementary feed for sheep is sourced. No issues were found with animal welfare in this flock. There was no suspicion of the illegal use of any drugs at this premises, possible source of residue is from mould in the hay, no silage is fed. Veterinary products are bought from the local distributor. Products recorded and used: Heptavac-P, Alamycin, Tetroxy Vet, Noromectin and Levacid and Spot-on. Advice was given on usage of authorised medicines, storage and correct disposal methods. The source of residue was not established; however, the likely cause is from feed contamination.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Urine	Taleranol 2.1 µg/ kg & Zeranol 1.6 µg/kg 1827437		Great Britain	At the abattoir, a sample had confirmed non-compliant for residues and in accordance with procedures an investigation was carried out at the medium sized farm of beef cattle, sheep and poultry. All animals were homebred, but last year (2017) some cattle were bought. Animals are sold to the slaughterhouse and market. At the time of investigation, all livestock were in the fields. Medicines were stored appropriately, records updated (excellently maintained), withdrawal periods adhered to. All the movement records inspected were found to be satisfactory. There was no evidence of the use of banned substances. Zeranol and taleranol are fungi in the Fusarium family; therefore, the most likely cause of these residues is from fungi-infected feed.
Sheep Urine	Taleranol 1.9 µg/ kg & Zeranol 1.9 µg/kg 1827429		Great Britain	This farm comprised of calves, fattening cattle and sheep (approximately 300 cattle, 550 sheep). The positive animal was one of two replacement lambs that had been de-selected from the replacement group and sent for slaughter with a group of store lambs. The replacement lambs were born in February and on inspection appeared well and healthy. Summer was very dry, and sheep would have been grazing tightly, the lambs would have had access to concentrate (from a local mill) as this is routinely used for the young lamb groups. A store room containing indoor silo was found to be clean and the silo structure was in good condition with no signs of mould. No hay or silage was given to the animal and its group, but they had grazed tightly on a patchy field. The farmer was advised of the potential risk mouldy feed can present due to the presence of mycotoxins and information was provided on medicine recording requirements. There was no evidence of the use of banned substances. Zeranol and taleranol are fungi in the Fusarium family; therefore, the most likely cause of these residues is from fungi-infected feed.
Sheep Liver	Closantel 1590 µg/kg		Northern Ireland	No action taken, although the concentration of closantel found (1590) was above the MRL (1500), the sample was found to be compliant as it was below the CCalpha (1606).
Sheep Liver	Closantel 1700 µg/kg 1805052	Solantel	Great Britain	This is a medium sized farm hosting approximately 200 sheep in addition to cattle herd. All medicines are supplied by the registered vet or local merchant with all records of purchase within the last 5 years maintained. Movement records of the sheep were found to be satisfactory, lambs were dosed 9 weeks before slaughter with Solantel which has a 42-day withdrawal period. All lambs were given the same dose, however it is suggested the dose, if anything, was underestimated. It is possible that lighter lambs were overdosed. The farmer was advised of obligations and information detailing requirements was provided. The investigation established that the likely cause of this residue was a misjudgement of the dose required for the animal concerned.
Sheep Liver	Closantel 1700 µg/kg 1807362		Great Britain	A large sheep farm. The owner has one building to house sheep/goats and 7 acres of grazing land. Sheep/goats are transported direct from farms and from many different auction markets (3000-4000 sheep per week – all breeds). Approximately 3-400 goat kids per year are purchased. The goats are kept in a separate straw bedded pen within the same building as the sheep. Sheep kept on the premises are not given any medicines at all. However, goats are treated. No wormers are used on the premises and none were found. The investigation established that the animal was slaughtered within an undisclosed withdrawal period at the time of purchase. The cause of residue could not be attributed to this farmer (but he had relied on the livestock market to make him aware of withdrawal period information). The farmer and the previous owner were advised of legal requirements and guidance was provided for reference.
Sheep Liver	Closantel 1800 µg/kg 1816757	Flukiver	Great Britain	A medium sized farm which comprises 459 cattle and approximately 2000 sheep. The positive animal had been sent to market, then to an abattoir where a sample was taken which tested non-compliant for a residue. An investigation showed that all medicines were supplied by a registered vet, medicines recorded and stored appropriately. According to the farmer and the medicine records, fluke treatment (closantel) (Flukiver) was given to the animal in January; withdrawal periods from the medicines used on the farm had been respected (Flukiver has a 42-day withdrawal period). The investigation was unable to establish a cause for this residue.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Liver	Closantel 2000 µg/kg 1806857		Great Britain	There are approximately 1300 lambs born on the farm each year. The farmer breeds his own ewe replacements and 7-8 replacement tups are bought in every year at market. These are kept on the farm for 5-6 years. Sheep are mainly grass-fed, mineral supplement is given in pre-lambing and pre-tupping period. Anthelmintics against liver fluke are administered to all sheep in January, March (including general worming) and in August. The positive animal was born on farm. The private vet practice does not provide the farmer with any product containing closantel. Currently, Supaverm oral suspension is the only product containing closantel used on farm, according to medicine records, the last administration took place in November with all ewes and tups being dosed. At the time of slaughter, the sample should have been compliant with the withdrawal period (as claimed by the farmer); however, the medicine records do not support this claim. The farmer was advised and provided information on regulatory requirements. Medicine storage on the farm was correct. The likely cause of this residue was an adherence to an incorrect withdrawal period and subsequent slaughter of the animal.
Sheep Liver	Closantel 2000 µg/kg 1807277		Great Britain	This is a medium sized farm of dairy cattle and sheep. The medicine records were inspected and no record of any product containing closantel was found. The farmer was drenching sheep with Combinex which contains levamisole and tridabendazole and previously drenched the sheep with Rycoben which contains ricobendazole. The last time the sheep were drenched was July 2017 (with Rycoben). The only product being used as an anthelmintic was Closantel as the Rycoben had expired. The owner explained that standard procedure is to drench the sheep and not sell them immediately. The sheep were sold 3 months after. The sheep was sold at market and then sold on (movement records were unaccounted for). At some point in October and between the slaughter dates, the sheep was treated again with a product containing closantel. The source of residue could not be established.
Sheep Liver	Closantel 2100 µg/kg 1806879	Solantel	Great Britain	A medium sized farm consisting of around 400 ewes with a mixture of breeds and 200 dairy cattle. All lambs produced are fattened and then sent to slaughter. The farmer confirmed that the sheep was from a batch sent to slaughter in February 2018. The wormer in use on the farm (Solantel) contains the active ingredient found in the residue (withdrawal period of 42 days shown on the medicine book). On inspection of the medicine records, 47 lambs had been treated in January 2018 with Solantel, some of these would have been within an unexpired withdrawal period. The farmer confirmed that he sprays marks all animals treated, however admitted that it was possible that a treated sheep may have accidentally escaped into the group being sent for slaughter, his father took the batch of sheep to the abattoir and may not have noticed a sheep with a mark showing it was treated when loading the sheep. The investigation established that the likely cause of this residue was a misidentification of the animal leading to slaughter whilst within a withdrawal period (measures in place were not adequate). The farmer was advised to ensure that animals are correctly identified, and information was provided regarding regulatory requirements for withdrawal periods/record keeping.
Sheep Liver	Closantel 2300 µg/kg 1807059		Great Britain	A medium sized beef cattle and mainly sheep farm. Liver fluke is a big problem in the area and as standard practice, the farm houses lambs September-October and fattens them inside. At the time of housing, they are given a final dose of Solantel (closantel). These lambs attract a premium market. The medicine records show that the lambs were dosed in 2017 and the lambs were well out of the withdrawal period. The farm is well run, and the farmer explained the dosing routine, lambs were all marked at the time of dosing, so there was no possibility that the lamb could have accidently been dosed twice during the procedure. In addition, the dosing gun is set to the recommended dose and therefore difficult to overdose an animal. The investigation was unable to establish a cause for this residue.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Liver	Closantel 2500 µg/kg 1807034	Flukiver	Great Britain	This is a small sized beef cattle and sheep farm. A positive residue had been found in one of the ewe lambs. The lamb had been sold to auction and moved to an abattoir. Lambing time is in spring, commencing April and are sold May-October. They range in age from 6-11 months old. Occasionally breeding sheep are bought in and are always kept at grass. Routine treatments used for sheep include wormers, applied twice in summer and twice in winter and some vaccines. The farmer did not have any medicine records, or proof of purchase of veterinary medicines. The medicine storage was checked, several expired medicines were found and some unidentifiable bottles. The investigation concluded that the lamb had been treated with an anthelmintic containing Closantel, (Flukiver). The farmer was advised on keeping veterinary medicine records, storage and disposal of medicines. The likely cause of residue was that the animal was sent for slaughter within a withdrawal period.
Sheep Liver	Closantel 3000 µg/kg 1806685		Great Britain	250 sheep in 12 lots from markets and farm premises were purchased on the day of sampling. The sheep identity was supplied by the official vet with an incomplete ear tag/flock number. This was not an individual unique identification - the information had been incorrectly recorded. The movement record showed the animal had been submitted for slaughter. The list of sheep sent for slaughter is not usually recorded on the tracing system making a source of identification difficult. Medicines are not administered routinely at the premises and there was no evidence of the use of medicines containing Closantel administered to the sheep. The premises are aware of medicine withdrawal requirements. The source of residue was not established as the animal was untraceable due to incomplete information.
Sheep Liver	Closantel 3600 µg/kg 1807369	Flukiver	Great Britain	A medium sized farm comprised of beef cattle and sheep. The positive sheep was transported to auction market, as a batch of 38 sheep and bought by a livestock dealer. The sheep was never present on the dealer's premises. The record keeping on the originating farm was found to be good; all records were complete and up to date. The owners were able to produce the movement document and food chain information declaration. Liver fluke is a problem in the locality, all sheep are routinely treated. The ewe in question and others were separated and administered Endofluke. The main flock were also treated, but due to poor response to initial treatment, 400 breeding ewes were treated with Flukiver. It is most likely that the sheep was included in the breeding ewe group that was administered Flukiver and was therefore in the meat withdrawal period when sold. It appears to be a genuine mistake. The farmer was advised of record keeping and withdrawal period requirements. The likely cause of this residue was a misidentification of the animal leading to slaughter whilst within a withdrawal period.
Sheep Liver	Closantel 3800 µg/kg 1807232	Flukiver	Great Britain	This is a medium sized 360-acre farm comprised of fattening cattle and sheep. The cattle and sheep are wintered indoors. The medicine records were inspected and found to be thorough but fail to identify clearly the treated groups of animals. There was an entry for the treatment of Flukiver which contains closantel, days prior to the consignment of the positive ewe for slaughter. The medicine storage area was inspected and confirmed products were obtained from the vet. The farmer was advised and provided information for record keeping requirements to ensure that withdrawal periods are observed. The likely cause of this residue was incomplete medicine records leading the animal to be slaughtered whilst within a withdrawal period.
Sheep Liver	Closantel 4016 µg/kg		Northern Ireland	An investigation was completed on 20/02/18. Lambs were bought on 02/12/17 and slaughtered on 30/01/18. Batch slaughtered contained both home bred and bought in lambs. Flock keeper did not treat after batch arrival, so it must have been a bought in lamb. No medicine records kept since 2016. Positive animal could not be identified. 2 batches of 5 follow up samples have been taken with one non-compliant in the first batch.
Sheep Liver	Closantel 4200 µg/kg		Northern Ireland	The flock keeper keeps up to date movement and medicine records. There was no purchase of closantel noted in previous 2 years. Some lambs stay on farm for only a few days and he slaughters 12,000 lambs per year. The positive animal could not be identified.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Liver	Closantel 5400 µg/kg 1817037		Great Britain	This is a medium sized farm of beef cattle and sheep. All lambs are bred to lamb from the beginning of April. Lambs are sold for slaughter from the beginning of December until May. In May, the 40 best of the remaining lambs born in 2017 were selected for slaughter. These lambs were given Ovidrench SC 2.5%. The meat withdrawal period is 4 days for sheep and is noted in the medicines record. Ovidrench does not contain Closantel. Closantel is used in the form of Superverm for liverfluke control. Superverm has a withdrawal period for meat of 65 days so should be clear of contamination. The farmer admitted that 'straying' is common with the flocks, it is possible that a recently drenched lamb from a neighbouring flock was sent for slaughter by mistake. A more likely explanation is the same drenching gun was used for Superverm and used for drenching the lambs with Ovidrench, but not emptied and flushed between uses. The medicine records and store were excellently maintained. A recommendation was given that after using drenching guns, these should be flushed with water and given a chance to dry out before being used again to reduce the chance of carry over between different medicines. The likely cause of residue was the drenching management system.
Sheep Liver	Nitroxynil 31 µg/kg 1806878		Great Britain	A small sized farm of 110 beef cattle and approximately 500 sheep. The owner breeds cattle using his bulls. All male calves are fattened and later sold at around 12 months old through local market. All the female calves are kept as replacement. Hoggs are bought from the local market; most lambs are fattened and later sold through local market. During September-October, the sheep are fluked (Flukiver) and wormed (Depidex). Medicine records are completed, and the medicines are stored appropriately. No Nitroxynil (Trodax 34%) was seen in the medicine storage and there were no expired medicines. The source of residue could not be established.
Sheep Liver	Levamisole 130 µg/kg 1816730		Great Britain	This is a medium size non-organic farm, keeping cattle and sheep. The beef-fattening herd is currently made of 70 cattle in total, all beef crosses. Cattle are homebred with occasional replacements purchased from the market as calves at less than 7 days of age and put to the cows for multi-suckling. Own heifers and bought ones are kept for replacement. Young stock is sold at 16 months of age as store cattle on local market. The sheep side of the farm is oriented almost exclusively for production of lamb direct for slaughter, supplying the local abattoir, with surplus stock sold as store sheep on the market. The current stock is 215 ewes, mainly suffolk and texel crosses. The off land is rented out to a dairy farmer from May to September, who is using it for growing grass. For the remainder of the year, land is used for overwintering sheep. Ewes are kept outdoor for most of the year with the exception of the lambing period, when they are brought to housing. The ewes are routinely vaccinated for Clostridial infection before lambing (booster) and fluke and lungworm treatment is administered before breeding. The animal from which the positive sample was taken was a castrated male lamb which was sent for slaughter in April 2018 in a batch of 12 lambs. It had been transported by the farmer direct to the abattoir. The investigation could not establish the cause of this residue.
Sheep Liver	Albendazole 3800 µg/kg	Endospec	Northern Ireland	An investigation was completed on 27/02/18. This animal was dosed with Endospec (albendazole) on 08/12/17. This has a 4-day withdrawal. Other sheep were re-dosed on 08/02/18 but flock keeper adamant that this one was not dosed as it was empty so was separated off into an adjacent pen for culling the next day.
Sheep Liver	Triclabendazole 310 µg/kg Triclabendazole sulfoxide 25 µg/kg Triclabendazole sulfone 88 µg/kg 1816794		Great Britain	The source of residue could not be established as the animal could not be traced.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Liver	Moxidectin 180 µg/kg 1807422		Great Britain	A medium sized farm comprised of beef cattle, sheep and horses. The positive animal was a 3-year-old ewe. The medicines records were inspected, and it was noted that Cydectin LA 20 had been used (contains Moxidectin, 104 days of withdrawal period). However, this was used after the sheep was slaughtered. This ewe had last been treated with the oral version of Cydectin in 2017. The farmer confirmed that he uses injectable Cydectin once per year, usually prior to lambing. Veterinary medicine storage was found to be satisfactory (there were no out of date medicines and no Cydectin was found). The farmer was advised regarding record keeping requirements for veterinary medicines purchased. Moxidectin can be found in the worming products for both horses and dogs, the owner's sheep graze on field which are over run by many footpaths and bridle ways that dogs have access to, it is possible that treated dogs are getting inside to a stream where sheep are drinking (but unlikely). The investigation was unable to establish a cause for this residue.
Sheep Liver	Rafoxanide 8980 µg/kg		Northern Ireland	An investigation was completed on 13/02/18. Flock of ~500 sheep. Some animals were treated with curafluke (fenbendazole & rafoxanide) but no sheep id so unable to say for sure about positive animal. Flock keeper thought he had correctly observed with withdrawal period. Medicine records are good although wrong withdrawal period recorded for curafluke.
Pigs				
Pig Kidney	Sulphadiazine 420 µg/kg	Unknown	Northern Ireland	The animal was born on site and was 6 -7 months old. Feed on farm with a 7 days withdrawal period. There was no record of when feed had been given; feed was collected during the investigation and this contained sulphadiazine at a concentration of 1.3mg/kg. Follow up samples were compliant.
Horse				
Horse Kidney	Cadmium 7000 µg/kg 1805712		Great Britain	This is a large sized farm of horses and sheep. The sample came from a horse over 20 years old, which was bought in a few days before the slaughter date. The owner, a horse dealer, also keeps lambs to fatten and these are fed concentrate. The horses are kept in a shed for a few days and fed with silage which is self-produced locally. The animals are not medicated, and medicines are not stored on the premise, animals are treated by private vet. No non-compliances were observed in the horse buildings/feed store. There was no evidence of contamination from batteries, anticorrosive coating of metals, pigments or other substances. No application of sewage sludge or phosphate fertilizers on the ground was found. The investigation established that there were potential sources of environmental contamination of the soil and water locally. Research has shown that heavy metals can accumulate in the kidney of animal's subject to low level exposure over time.
Deer				
Wild Deer Muscle	Lead 50000 µg/kg 1835445		Great Britain	A muscle sample was taken from a wild red deer carcase not on farm. The farmer shoots approximately 100 deer a year within a 25-mile radius of the farm, using copper coloured bullets which may contain lead in the core. There is no evidence of old lead mines in the area and no information is available to indicate lead contaminated waste, such as old paint. The most likely cause of lead found in the sample is from lead contamination from the rifle bullet used to kill the deer.
Poultry				
Broiler Muscle	Chloramphenicol 2.4 µg/kg 1831401		Great Britain	An investigation at the farm showed no evidence of the use of chloramphenicol. Medicine records were well kept, and the farmer is a member of the Red Tractor Assurance Scheme. There was no evidence that the authorised officials taking samples at the abattoir were taking medication containing chloramphenicol, but staff at all abattoirs have been reminded of the need to avoid taking samples if they are on medication that can compromise the integrity of the samples.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Broiler Muscle	Chloramphenicol 2.6 µg/kg 1831407		Great Britain	An investigation at the farm showed no evidence of the use of chloramphenicol. Medicine records were well kept, and the farmer is a member of the Red Tractor Assurance Scheme. There was no evidence that the authorised officials taking samples at the abattoir were taking medication containing chloramphenicol, but staff at all abattoirs have been reminded of the need to avoid taking samples if they are on medication that can compromise the integrity of the samples.
Broiler Liver	Monensin 15 µg/kg 1824149		Great Britain	The farm is an independent producer and uses a pan feeding system. Birds start on a diet, followed by a withdrawal diet. Processes are all manual for the bin and pan feeding systems. The farm was found to be clean and tidy. There had been issues with transport which caused the farmer problems in planning feed. According to the owner, cockerels were fed a plain diet, but a different bin was used for the withdrawal diet which may have caused confusion. There were no records to show when the birds are moved onto feed from a different bin. The main issue appeared to be lack of bin space and having to use tote bins (this increases the risk of error, but there were no signs of it). All production records were satisfactory. However, the cross-contamination matrix the mill uses has always been of concern, but nothing further was found during testing. There were no obvious causes of residue at the farm or mill (insufficient evidence to show where the residue originated from), therefore the result is inconclusive, but likely cause is feed contamination. Visits, to the farm and mill prove useful to remind everyone of the importance of traceability and good record keeping procedures (these will be followed up at next inspections).
Partridge Muscle	Lasalocid 51 µg/kg 1811186		Great Britain	**Awaiting investigation report.**
Partridge Muscle	Lasalocid 220 µg/kg 1835508		Great Britain	A residue of lasalocid was found in the muscle of a partridge from a farm of 11,000 pheasants, partridge and some grouse. Due to a poor chick season earlier in the year, a second batch of partridge chicks were bought in to make up numbers, causing the site to have two age groups of partridge. The estate has several pens throughout the valley and feed store. All feed is stored in the same store and there is no segregation between the feeds, as all the bags are almost identical. It relies on staff checking the bag label to ensure that correct feed is used. The inspector believes this was an on-farm issue, most likely due to incorrect feed being used prior to the shoot to keep the first batch of partridge in the area. The farm has a procedure of stopping feeding a particular feed to birds 5 days before the first shoot, however there was no record of when feed is stopped for each batch and no procedure in place to ensure that the two batches are fed separately. In addition, the farm reported an escape from one of the pens in the second batch a few days before the shoot (small numbers). This could have been the cause, as could migrating partridge from a nearby shoot (attracted to the feeders). Recommendations were made to record when feed is removed from each pen/batch of birds, as well as advice on better feed store management. Probable cause of residue is from feed contamination on-farm due to incorrect feed.
Pheasant Muscle	Lasalocid 290 µg/kg 1835573		Great Britain	**Awaiting investigation report.**
Eggs				
Hen Eggs	Salinomycin 27 µg/kg 1812449		Great Britain	A follow-up investigation at the farm showed no evidence that the residue was owing to on-farm feeding practices. Feeding is automated and no coccidiostats are used. As part of the investigation at the feed mill salinomycin was included in the feed produced prior to the one linked with this residue, indicating the possibility of cross contamination. Following the investigation, the mill replaced a screw auger to solve any potential problem at the divertor.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Hen Eggs	Lasalocid 190 µg/kg 1820866		Great Britain	The farm has 4 laying houses with 400 birds in houses 1, 2 and 3 and 500 birds in house 4. The egg samples were taken from house 2. The laying houses are situated in a field to the right of the farm yard. In the field to the left of the far yard, there is a game rearing area, with approximately 1,000 birds in pens. The layers feed is delivered in bulk. There is one 6ft bin in the farm yard. Game feed is delivered in sacks and stored in the cart shed in the field with the pheasants. There were no feeding records available on the farm. Feed is released from the bin into empty feed sacks and the laying hens are fed ad lib. It is likely, although not proven that when feed was decanted into old feed bags, there was a level of contamination remaining in the feed sack. Alternatively, there may have been a mix up with feeding the medicated feed to the wrong species. It was recommended that the farm take measures to clarify, identify and segregate layers and pheasant feed. However, there was also evidence of cross contamination at the feed mill, and the mill was advised to validate their mixer dispersion efficiency and carry over procedures.
Hen Eggs	Lasalocid 230 µg/kg 1820797		Great Britain	The owner keeps one barn of chickens and also rears calves. The chicken shed is split into 3 pens containing between 50-150 birds per pen, birds are kept for a maximum of 53 weeks and are bought onto the farm approximately 2-3 weeks before point of lay. The sample was taken from the barn, though the pen could not be identified. There appeared to be no issues with pests. The mill equipment appeared old and there was split feed on the floor of the store room housing the feed bins. Calf feed is stored in bags on pallets. The owner does not medicate his chickens in feed and no water-soluble medication is used. No delivery records are kept at the farm. The outcome of this food safety investigation is inconclusive, and the source of the residue cannot be established, however it does not appear to be due to feeding practices on the farm. Information provided by the feed manufacturer has demonstrated that they are not following their loading procedures for medicated feed and loading sheets do not clearly indicate which compartments have been used. It was recommended that all staff involved in the loading procedure and transport planning receive further training in procedures when dealing with medicated feed and additional checks are introduced to ensure that medicated feed is loaded in accordance with written procedures.
Hen Eggs	Lasalocid 460 µg/kg 1830991		Great Britain	A small farm comprised of sheep, dairy cows and 2 sheds containing 120 barn hens in each. There is 1 stand-alone bin that is not connected to a shed. A slide is opened, and the bin is dropped onto a wheelbarrow where it is transported to the sheds. Eggs are mainly sold to locals who collect from the farm. The farmer does not keep game birds or samples, so the inspector could only take a sample from the feeder from the last delivery of feed. The importance of keeping samples and paperwork was explained to the farmer. A visit to the feed manufacturer was undertaken in December 2018. All paperwork was available for inspection of production records, no issues were found. Unfortunately, as it is a small farm that takes 3 months to get through the feed, there were no samples available of the offending batch. There was no evidence of cross contamination either at the mill or the farm. Given that the feed manufacturer had a similar investigation for feed produced earlier in the year, which was deemed to down to a slide being left open, it is possible the error could have occurred at the mill, before they knew there had been a problem, however, there is no evidence of this. The mill has had its 'Earned Recognition' removed and has taken steps to implement various measures. The likely cause of residue was not established but is likely to be linked to feed contamination.
Hen Eggs	Lasalocid 790 µg/kg 1812428		Great Britain	The owner keeps 600 barn hens in 3 sheds and supplies to local outlets. Feed is transported to the sheds using a wheel barrow. There are no game birds. All feed is blown into one bin; it is not linked to any automated system. Tests showed that there was no lasalocid in the minerals used in the layers feed. The investigation established that the cause of residue was a feed mill error due to a fault in one of the 'diverting slides' and game feed was added to a bin containing plain layers feed. The mill is implementing measures to improve feed safety. Earned recognition has been removed from the mill.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Milk				
Cattle	Closantel 61 µg/l	Unknown	Northern Ireland	The animal was from a dairy herd of 60 animals; 4 cows had been bought in shortly before the non-compliant animal sampled. One follow sample was compliant.
Cattle	Ivermectin 6.5 µg/l	Ivomec	Northern Ireland	The animal is from a dairy herd of 350. Ivomec had been administered to the animal on 29/9/18 and slaughtered on 20/11/18; this gave 52 days withdrawal rather than the recommended 60 days (although this should not be used in milking cows). All pregnant heifers are dosed prior to housing in the autumn time, however due to the better weather this year; the animals were housed later and dosed later. The animal calved early. A follow up sample was compliant.
Cattle Milk	Ivermectin 12 µg/kg 1830956	Ivomec	Great Britain	The owners have a small dairy farm with 65 milking cows; 15 dry cows, 23 heifers and 2 pedigree bulls. Calves are normally sold at an early age but are kept with intention to be sold. The farm is dedicated to milking cows only. There is extensive type of grazing and winter housing facilities. Animals were treated with Ivomec and milk was used to feed calves. Unfortunately, there was an error, some milk from these cows was disposed into the bulk tank, the farmer admitted the mistake. Medicines are stored appropriately, records are up to date and withdrawal periods are recorded. However, the withdrawal period was not respected in this case. Treated milk that entered the bulk tank in error is the likely cause of residue. There is a very good system to identify the animals under medication. The farmer was found to be negligent and was advised.
Cattle Milk	Closentel 77 µg/l		Northern Ireland	An investigation was completed on 05/01/18. A mix up on farm as a result of accommodation being damaged resulted in in-calf heifers being mixed with maiden heifers and treated. In total 30 animals treated rather than 20. Milk from these animals was added to bulk tank after calving. Milk and tissue follow up samples all compliant.

SAMPLING OF ANIMALS SUSPECTED OF CONTAINING A RESIDUE AT THE TIME OF SLAUGHTER: 2018

RESIDUES DETECTED ABOVE THE REFERENCE POINT TO DATE: 31 December 2018

Sample	Analysed for	No. of analyses	No. of Non-compliant samples	Reference Point µg/kg/l	Concentrations above the Reference Point µg/kg/l (more than one substance may be found in one sample)
Calves Kidney	Antimicrobials (Screen 1)	10	6 1	600 600	1200, 2700, 3000, 14000, 17000, 28000 (oxytetracycline) 5200 (chlortetracycline)
Cattle Kidney	Antimicrobials (Screen 1)	1165	4 2	150 50	370, 402, 500, 870 (marbofloxacin) 92, 764 (PenG)
Cattle Kidney	Antimicrobials (Screen 4)	1165	2 substances in 1 sample 1	1000 600 3000	1750, 2000, 4800, 4800 (dihydrostreptomycin) 1230, 1400, 1940, 2100,7200 (oxytetracycline) 5200 (tulathronycin)
Cattle Kidney	Florfenicol	1162	1	300	550 (florfenicol)
Cattle Liver	Corticosteroids	14	1	1.8	5.2 (cortisol)
Cattle Liver	Antiparasitics	103	2 substances in 1 sample	100 500	174 (levamisole) 4500 (oxyclozanide)
Cattle Urine	Steroids	16	2	N/A	33, 37 (testosterone)
Sheep Liver	Antimicrobials	79	8	1500	1800, 1877, 2600, 2700, 3491, 3918, 4060, 4684, (closantel)
Sheep Kidney	Antimicrobials	37	2 1	600 1800	1100, 1705 (oxytetracycline) 5500 (tulathromycin)

RESULTS OF FOLLOW-UP INVESTIGATIONS: 31 December 2018

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle				
Calves Kidney	Oxytetracycline 1200 µg/kg 1897018	Alamycin	Great Britain	This is a large farm of calves, dairy cattle and fattening cattle. All medicines were appropriately labelled and stored. The animal that identified positive was a 4-week-old calf. The medicine records showed the animal had been injected with Alamycin (withdrawal period written of 34 days – data sheet 31 days). The withdrawal date was written on the wall behind the individual calf pen. The medicine record book would have normally been checked but was not done on this occasion. The inspector is of the opinion that this was a genuine mistake. It is a large dairy herd, and this is the first positive residue they have had. Recording of wormers and vaccinations which were not in the medicine book, but in a separate book were discussed. The likely cause of residue is the animal was sent for slaughter within a withdrawal period.
Calves Kidney	Oxytetracycline 2700 1897014		Great Britain	A large dairy farm comprised of bulls and beef calves (approximately 900 cattle). The positive calf had been treated with one single dose of Alamycin LA. The animal had been moved off the farm the following month after treatment. The inspection found the farm to be a well-run unit with good record keeping procedures. Treatments given to calves were recorded in the medicine record books. Adequate animal ID and withdrawal periods had been recorded. Medicines were all stored appropriately. No medicine is disposed of as it is used (small quantities are purchased). The farmer was advised and reminded of obligations for record keeping/withdrawal period requirements (including close monitoring of any medicine administration given to calves). The investigation concluded the cause of this residue could have arisen from the poor metabolism of the animal or an extra accidental dose being administered.
Calves Kidney	Oxytetracycline 3000 µg/kg 1897016	Alamycin	Great Britain	This is a medium sized farm comprised of calves, dairy and fattening cattle and sheep. Calves are either sold at approximately 5 weeks of age or retained for breeding. The positive animal was sold at auction to a dealer and then slaughtered the following day. The positive result was observed in a calf which had been injected with Alamycin LA. It was slaughtered 38 days later. The withdrawal period for Alamycin LA for meat is 31 days. The possible cause of residue result is a mistake made with actual dosing administered, however this cannot be verified. All the data available implies the dose rate was observed and the withdrawal period had passed. The farmer was advised re: care with respect to actual dose given. However, it cannot be verified from records that this was actually the cause of residue. According to records found, no errors were made. The cause of residue could not be established.
Calves Kidney	Oxytetracycline 14000 µg/kg 1897006 Chlortetracycline 5200 µg/kg 1897006 (linked to 1897008)		Great Britain	A medium-sized dairy cattle farm. The positive calf was not recorded as having been treated but there were other instances of inaccuracies within the medicine's records. The inspection was unable to ascertain the cause of the Chlortetracycline residue as there is no use of Chlortetracycline in any other way aside from spray for cutaneous application. However, the inspection was able to confirm Oxytetracycline was definitely in use on farm (Alamycin for calves and Terramycin for dairy cattle). Given the positive calf came from a batch of calves stricken with diarrhoea and respiratory symptoms, it is likely the positive residue was caused by probable unrecorded treatment whilst within a withdrawal period.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Calves Kidney	Oxytetracycline 17000 µg/kg 1897070		Great Britain	A medium sized dairy farm comprised of 400 cattle (bullocks, female cows, calves) and sheep. The farmer had sold 2 calves through the market and admitted treating the calves with the Oxytetracycline product (Hexhasol). The records of purchase were unavailable, and the farmer did not record the treatment in the veterinary medicine records. No vaccines are used at the farm. All medicines were stored correctly in a lockable, however 1 bottle of expired Linco-Spectin was found (3-4 months out of date). No other unused, out of date veterinary products were found during the visit. The farmer was strongly advised to keep a thorough record of all the treatments administered, to adhere to withdrawal periods in milk and meat and requested to contact the PVS regarding the disposal of the expired medicine. The investigation established the likely cause of this residue was an unrecorded treatment and subsequent slaughter whilst within a withdrawal period.
Calves Kidney	Oxytetracycline 28000 µg/kg (linked to 1897006)		Great Britain	A medium-sized dairy cattle farm. The positive calf was not recorded as having been treated but there were other instances of inaccuracies within the medicine's records. The inspection was able to confirm Oxytetracycline was definitely in use on farm (Alamycin for calves and Terramycin for dairy cattle). Given the positive calf came from a batch of calves stricken with diarrhoea and respiratory symptoms, it is likely the positive residue was caused by probable unrecorded treatment whilst within a withdrawal period.
Cattle Kidney	Oxytetracycline 1230 µg/kg	Hexasol LA	Northern Ireland	An investigation was completed on 19/02/18. Animal was treated with Hexasol LA (Oxytetracycline) on 23/11/17. This has 35 days withdrawal which was adhered to. The animal was also treated with the same drug on 02/11/17 and 03/11/17. Five follow up samples were compliant.
Cattle Kidney	Oxytetracycline 1400 µg/kg 1897005	Engemycin	Great Britain	This is a large well-run cattle farm of high-level pedigree Holsteins. Medicine records indicate that 2 cows received Engemycin in the 10 days preceding the departure of the calf from the farm. The farmer's normal practice is to feed the antibiotic contaminated milk to the bull calves (that cannot enter the food chain). He was certain he did not give the positive calf an antibiotic injection. The level of oxytetracycline found in the calf was very high to have ingested it through waste milk. There was no record of the calf receiving an injection. 48 hrs were also unaccounted for after the calf left the farm before it was slaughtered. The farmer was advised accordingly regarding bad practice methods and on requirements for compliance with the regulations. The likely cause of this residue was contaminated milk fed to the calf.
Cattle Kidney	Oxytetracycline 1940 µg/kg	Alamycin L. A.	Northern Ireland	The animal was from a beef breeding herd and had been treated with Alamycin L.A. injection 30 days prior to slaughter; the recommended withdrawal period is 31 days.
Cattle Kidney	Oxytetracycline 2100 µg/kg		Northern Ireland	The animal had problems with sight. The private vet was called and provided eye ointment which was used for 7 days. As the animal was better he slaughtered it. He was unaware of any systemic antibiotic treatment although he was not present during the visit. An employee later confirmed that an injection had taken place but that no injectable solution was left behind by the vet for further treatment. The PVP did leave alamycin behind for injection 2-3 days later. The injection by the vet was 20 days prior to slaughter. The withdrawal time is 28 days. Five follow up samples were compliant.
Cattle Kidney	Dihydrostreptomycin 1750 µg/kg	Pen & Strep	Northern Ireland	Herd keeper purchased animal 6 days prior to slaughter and did not treat animal. Previous owner administered Betamox & Pen & Strep 8-10 weeks previously. Follow up samples compliant.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle Kidney	Dihydrostreptomycin 2000 µg/kg Oxytetracycline 7200 µg/kg & 1897098	Alamycin Ubro-Yellow	Great Britain	The animal came from a large cattle farm of both beef and dairy cattle approximately 1090 in number. All medicines are purchased from a vet surgery and receipts/invoices left by the private Veterinarian and readily available for inspection. Paper records are entered electronically and then subsequently discarded. The medicines found in storage consisted of various antibiotics and intramammary suspensions. The animal had two post-injection abscesses on both back legs and was being treated for Mastitis. Although there are no records of the animal being treated with any medicines containing oxytetracycline it has been noted Alamycin (containing Oxytetracycline) has been used on the same herd as the non-compliant cattle. The farmer also made an error with the withdrawal period of the intramammary suspension tubes, assuming the withdrawal period for Ubro-Yellow (contains Dihydrostreptomycin) would be the same as Tetra-Delta. The likely cause of residue in the animal is due to the animal receiving unrecorded antibiotic treatment whilst within a withdrawal period. The non-compliant residue has been discussed with the farmer and private Veterinarian to ensure better record-keeping and medicine dosage.
Cattle Kidney	Dihydrostreptomycin 4800 µg/kg	Pen & Strep	Northern Ireland	Animal came from dairy herd of 265 animals. Animal was treated with Pen & Strep by PVP after an operation for twisted stomach. The herd keeper then treated the animal for 3 more days as advised by vet and slaughtered at end of withdrawal period. Treatment should only be given once daily for up to 3 consecutive days.
Cattle Kidney	Dihydrostreptomycin 4800 µg/kg	Pen & Strep	Northern Ireland	The animal is from a dairy herd of 1029. The herd keeper treated animals with only 15ml of PenStrep intramuscularly even though the recommended dosage is 1ml/25kg. The withdrawal period was adhered to. A milk follow up sample was compliant.
Calves Kidney	Tulathromycin 5200 µg/kg 1897096	Draxxin 50ml	Great Britain	The animal came from a medium sized farm with approximately 450 cattle and followers. There are five workers on the farm, including the farmer himself and his wife and son. The calves are given colostrum with 1ml of apple cider vinegar to solidify it. The farmer suspected a farm worker may have treated the calf and forgot it to record it in the medicines book. The farmer was very apologetic and explained this was the first occasion this had occurred in over 50 years of farming. The case has been referred to the Rural Payments Agency.
Cattle Kidney	Marbofloxacin 370 µg/kg	Marbonar	Northern Ireland	Animal came from 320 head beer finishing herd, it was treated with Marbonar injectable (6-day withdrawal) in line with the manufacturer's instructions on 22/04/18 and slaughtered on 04/05/18. Animal had been on farm approx. 6 weeks prior to slaughter. No explanation for non-compliance. Follow up samples compliant.
Cattle Kidney	Marbofloxacin 402 µg/kg	Marbocyl	Northern Ireland	Animal purchased 20 days before slaughter. Treated with Marbocyl 10% injectable on 20th & 21st December. This has 6-day withdrawal. Slaughtered on 29th December.
Cattle Kidney	Marbofloxacin 500 µg/kg	Unknown	Northern Ireland	The animal came from a beef herd of 46. The herd keeper had administered a medication he had obtained from farming relative. He had not sought any professional advice and was not sure what product he had used, or the dosage he had given to the animal. Withdrawal and dosage vary amongst the preparations for Marbofloxacin; this animal had been given 5 days withdrawal (Marbocyl has a 6-day withdrawal).
Cattle Kidney	Marbofloxacin 870 µg/kg	Marbocyl	Northern Ireland	The animal had been treated with Marbocyl 10% by a relief worker as the owner of the animal and his farm manager were both off. The treatment had not been recorded in the medicine book by mistake. The owner now insists that only he and the farm manager administer medicines so that no further occurrences like this can happen again. There is a total of 1515 animals on the farm. A follow up milk samples and 9 follow up tissue samples were all compliant.
Cattle Kidney	Penicillin G 92 µg/kg	Norocillin	Northern Ireland	Animal was treated with Norocillin on 31/01/18 and slaughtered as a casualty animal on 12/02/18. Withdrawal period for this product is 7 days. Veterinary Officer suggested that metabolism of the animal was impacted by illness or that the drug company's withdrawal time on the product was wrong. Follow up samples compliant.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Cattle Kidney	Penicillin G 764 µg/kg	Multishield	Northern Ireland	Animal came from a dairy herd of 617 animals. Animal was treated with Multishield DC on 25/04/18 and sampled on 08/05/18. Residues issue due to human error as dry cow preparation used instead of teat sealant. Steps taken to ensure the error will not be repeated on this farm which is a good managed farm. Follow up samples compliant.
Cattle Kidney	Florfenicol 550 µg/kg	Unknown	Northern Ireland	There were no records on farm to show this animal had been treated. The herd keeper suggested it was injected in summer 2018 at TB testing, but not treated after that time. This animal was slaughtered in December 2018.
Cattle Liver	Cortisol 5.2 µg/kg	Unknown	Northern Ireland	No investigating visit was undertaken as the animal was a casualty which had been condemned; the high cortisol level is indicative of the stress the animal will have encountered.
Cattle Liver	Levamisole 174 µg/kg & Oxyclosanide 4500 µg/kg		Northern Ireland	The animal is from a herd of 380. Levafas Diamond was correctly administrated to the animal and the withdrawal period was adhered to. This animal was purchased 16 months previously. This was a casualty animal. 5 follow up samples were compliant.
Cattle Urine	Testosterone 33 µg/kg	N/A	Northern Ireland	No investigating visit was undertaken as animal concerned was a young bull and bull animals can produce high physiological levels of this hormone.
Cattle Urine	Testosterone 37 µg/kg	N/A	Northern Ireland	No investigating visit was undertaken as animal concerned was a young bull and bull animals can produce high physiological levels of this hormone.
Sheep				
Sheep Liver	Closantel 1800 µg/kg	Unknown	Northern Ireland	The flock keeper keeps up-to-date movement and medicine records. There were no purchases of closantel noted in previous 2 years. Some lambs stay on farm for only a few days and he killed 12,000 lambs per year. Positive animal could not be identified.
Sheep Liver	Closantel 1877 µg/kg	Unknown	Northern Ireland	The flock keeper keeps up-to-date movement and medicine records. There were no purchases of closantel noted in previous 2 years. Some lambs stay on farm for only a few days and he killed 12,000 lambs per year. Positive animal could not be identified.
Sheep Liver	Closantel 2600 µg/kg	Closamectin	Northern Ireland	The positive animal was injected with Closamectin on 29/9/18 and was sent to slaughter on 16/10/18; giving only 17 days withdrawal rather than the recommended 28 days. The farmer was terminally ill and has since died, his son was looking after the animals and sent all lambs for slaughter including those which he treated with the Closamectin.
Sheep Liver	Closantel 2700 µg/kg	Unknown	Northern Ireland	An investigation was completed on 20/02/18. Lambs were bought on 02/12/17 and killed on 30/01/18. Batch slaughtered contained both home bred and bought in lambs. Flock keeper did not treat after batch arrival, so it must have been a bought in lamb. No medicine records kept since 2016. Positive animal could not be identified. 2 batches of 5 follow up samples have been taken with one non-compliant in the first batch.
Sheep Liver	Closantel 3491 µg/kg	Unknown	Northern Ireland	The flock keeper keeps up-to-date movement and medicine records. There were no purchases of closantel noted in previous 2 years. Some lambs stay on farm for only a few days and he killed 12,000 lambs per year. Positive animal could not be identified.
Sheep Liver	Closantel 3918 µg/kg	Unknown	Northern Ireland	The flock keeper keeps up-to-date movement and medicine records. There were no purchases of closantel noted in previous 2 years. Some lambs stay on farm for only a few days and he killed 12,000 lambs per year. Positive animal could not be identified.
Sheep Liver	Closantel 4060 µg/kg	Unknown	Northern Ireland	The flock keeper bought the animal 3 weeks prior to slaughter. He did not treat the animal. All follow up samples were compliant.
Sheep Liver	Closantel 4684 µg/kg	Unknown	Northern Ireland	The flock keeper keeps up-to-date movement and medicine records. There were no purchases of closantel noted in previous 2 years. Some lambs stay on farm for only a few days and he killed 12,000 lambs per year. Positive animal could not be identified.
Sheep Kidney	Oxytetracycline 1100 µg/kg	Unknown	Northern Ireland	This was a herd of 204 animals. The animal was bought in market and taken straight to the factory.

Species & Matrix	Residue detected & concentration (RIM Ref)	Products used	Region	Cause of residue
Sheep Kidney	Oxytetracycline 1705 µg/kg	Unknown	Northern Ireland	It was impossible to determine which lamb was positive animal as 21 were killed in a batch and all had been bought in. This farmer buys and kills within 6 weeks. Flock keeper did have alamycin on farm and had recorded treatment of two lambs on 1st March however it would appear that these were not among the lambs killed. Follow up samples compliant.
Sheep Kidney	Tulathromycin 5500 µg/kg	Unknown	Northern Ireland	This animal was a follow up sample to the Oxytetracycline 110 µg/kg animal.

Full details of 2018 UK statutory surveillance programme by sector

RED MEAT

Substance Group/Analyte	Species	Age & Sex	Matrix	No of Analyses	No. above Action Level	Concentration where samples above the Action Level (µg/kg/l)
A2 Thyrostats						
Thyrostats	Cattle		Urine	168		
	Fattening cattle		Urine	232		
	Horses		Urine	1		
	Pigs		Urine	101		
	Sheep		Urine	74		
A3 Hormones						
Gestagens	Cattle		Kidney Fat	286		
	Fattening cattle		Serum	286		
	Pigs		Kidney Fat	102		
	Sheep		Kidney Fat	79		
Methyltestosterone	Pigs		Feed	30		
Oestradiol	Cattle	Male	Serum	207		
	Fattening cattle	Male	Serum	336		
Steroid screen 1 ,,	Cattle		Urine	1097	22 1 5 1 4	0.33, 0.34, 0.37 0.43, 0.47, 0.49, 0.53, 0.75, 1.1, 1.2 1.9, 2.1, 3.7, 6.1, 6.8, 6.8, 7.1, 8.1, 8.4, 10, 11, 23 (Alpha-nortestosterone) 0.46, (Beta-nortestosterone) 0/3.85, 0.37/4.67, 2.5, 3.5, 4.9, (Alpha-boldenone) 116 (alpha-oestradiol) 13, 15, 17, 17.5 (testosterone)
	Fattening cattle		Urine	1165	2 3 1	2.2, 2.4 (Alpha-boldenone) 6.0, 9.2, 18 (Alpha-nortestosterone) 0.67, (Beta- boldenone)
	Horses		Urine	2		
	Pigs		Urine	357		
	Sheep		Urine	494	24 1 1	1.35/4.8, 1.8/3.0, 2.1, 2.1/4.7, 2.3, 2.5, 2.6, 2.7, 2.8, 2.9, 3.3, 3.4, 3.5, 3.9, 4.0, 4.0, 4.4, 4,7, 4.8, 5.0, 5.5, 6.1/5.2, 8.1,13 (Alpha-boldenone) 3.3 (Beta-nortestosterone) 14 (Alpha- nortestosterone)
Testosterone	Cattle	Female	Serum	320	1	0.39 (Beta-testosterone)
	Fattening cattle	Female	Serum	322		
A4 Hormones						
Zeranol	Cattle		Urine	404	15	0.53, 0.76, 1.1, 1.2, 1.3 1.4, 1.6, 3.4, 3.8 (Taleranol) 0.27, 0.43, 0.58, 1.2, 1.5 2.0 (Zeranol)
	Fattening cattle		Urine	366	20	0.45, 0.60, 1.8, 2.6, 3.0, 3.2, 3.4, 3.5, 3.8, 3.9, 8.8 (Taleranol) 1.1, 1.4, 1.4, 1.5, 1.7, 2.3, 2.6, 3.1, 4.9 (Zeranol)
	Pigs		Urine	240		
	Sheep		Urine	109	4	0.68, 1.1, 1.9 2.1 (Taleranol) 1.1, 1.2, 1.6, 1.9 (Zeranol)

A5 Beta-Agonists						
	Calves		Liver	7		
	Cattle		Liver	569		
	Fattening cattle		Feed	222		
A5 Beta-Agonists						
	Fattening cattle		Urine	244		
	Horses		Liver	17		
	Pigs		Feed	48		
	Pigs		Liver	399		
	Sheep		Liver	280		
A6 Annex IV						
Chloramphenicol	Calves	< 6 months	Kidney	8		
	Cattle		Kidney	296		
	Fattening cattle		Feed	295		
	Fattening cattle		Urine	58		
	Horses		Kidney	3		
	Pigs		Kidney	266		
	Sheep		Kidney	151		
Nitrofurans	Calves	< 6 months	Kidney			
	Cattle		Kidney	167		
	Fattening cattle		Feed	214		
	Horses		Kidney	2		
	Pigs		Feed	9		
	Pigs		Kidney	325		
	Sheep		Kidney	241	1	1.4 (Sem)
	Turkeys		Muscle	56		
Nitroimidazoles	Calves	< 6 months	Kidney	3		
	Cattle		Kidney	169		
	Horses		Kidney	2		
	Pigs		Feed	18		
	Pigs		Kidney	242		
	Sheep		Kidney	114		
B1 Antimicrobial						
AMS1	Calves	< 6 months	Kidney	127	3	1600, 2300, (Oxytetracycline) 330 (Gamithromycin)
	Cattle		Kidney	1274		
	Horses		Kidney	7		
	Pigs		Kidney	1377		
	Sheep		Kidney	2060	1	1200 (Oxytetracycline)
Florfenicol	Calves	< 6 months	Kidney	96	1	4400 (Florfenicol)
	Cattle		Kidney	279		
	Sheep		Kidney	219		
	Pigs		Kidney	121		
AMS2	Cattle		Kidney	138		
	Pigs		Kidney	371	1	420 (Sulfadiazine)
	Sheep		Kidney	8		

AMS4	Calves	< 6 months	Kidney	103	2	33000 (Dihydrostreptomycin) 36000 (Paramomycin)
	Cattle		Kidney	134		
	Sheep		Kidney	101		
B2A Anthelmintics						
Anthelmintics	Cattle		Liver	518	3	1400, 1794, 2600 (Closantel)
	Pigs		Liver	326		
	Sheep		Liver	1475	15 1 1 1 1 3	1590, 1700, 1700, 1800, 2000, 2000, 2100, 2300, 2500, 3000, 3600, 3800, 4016, 4200, 5400 (Closantel) 31 (Nitroxynil) 130 (Levamisole) 3800 (Albendazole) 8980 (Rafoxanide) 310 (Triclabendazole) 25 (Triclabendazole sulfoxide) 88 (Triclabendazole sulfone)
Avermectins	Cattle		Liver	302	2	125, 220 (Ivermectin)
	Horses		Liver	7		
	Pigs		Liver	134		
	Sheep		Liver	454	1	180 (Moxidectin)
B2B Coccidiostats						
Coccidiostats	Calves	< 6 months	Liver	17	1	36 (Halofuginone)
	Pigs		Liver	110		
	Sheep		Liver	366		
B2C Pesticide Screen						
Pyrethroids + Carbamates	Calves	< 6 months	Kidney Fat	31		
	Cattle		Kidney Fat	8		
	Cattle		Liver	8		
	Horses		Kidney Fat	2		
	Pigs		Kidney Fat	75		
	Pigs		Liver	8		
	Sheep		Kidney Fat	549		
B2D Sedatives						
	Breeding Boar		Liver	68		
	Cattle		Liver	37		
	Horses		Liver	7		
	Pigs		Liver	165		
	Pigs		Kidney	22		
	Sheep		Liver	89		
	Sheep		Kidney	6		
B2E NSAIDs						
	Cattle		Kidney	653	1	10 (Ibuprofen)
	Horses		Kidney	36		
	Pigs		Kidney	40		
	Sheep		Kidney	48		
B2F Glucocorticoids						
	Cattle		Liver	340		
	Horses		Liver	6		
	Pigs		Liver	47		
	Sheep		Liver	23		

B2 F Carbadox						
	Pigs		Liver	7		
B3A Pesticide Screen						
OC/PCBs	Cattle		Kidney Fat	80		
	Horses		Kidney Fat	1		
	Pigs		Kidney Fat	72		
	Sheep		Kidney Fat	128		
B3B Pesticide Screen						
OPs	Cattle		Kidney Fat	239		
	Horses		Kidney Fat	1		
	Pigs		Kidney Fat	147		
	Sheep		Kidney Fat	565		
B3C Heavy Metals						
Metals	Cattle		Kidney	74	1	870 (Lead)
	Cattle		Muscle	15		
	Horses		Kidney	1	1	7000 (Cadmium)
	Pigs		Kidney	13		
	Pigs		Muscle	2		
	Sheep		Kidney	51	5	520, 530, 1900 (Lead) 1300, 1300 (Cadmium)
	Sheep		Muscle	4		
B3D Mycotoxins						
Mycotoxins	Cattle		Liver	29		
	Pigs		Liver	76		
	Sheep		Liver	16		
POULTRY						
Substance Group/Analyte	**Species**	**Age & Sex**	**Matrix**	**No of Analyses**	**No. above Action Level**	**Concentration where samples above the Action Level (µg/kg)**
A3 Hormones						
Steroid screen 2	Broilers		Liver	519		
	Broiler		Serum	67		
	Ducks		Liver	8		
	Hens		Liver	29		
	Turkeys		Liver	77		
A5 Beta-Agonists						
	Broilers		Feed	205		
	Broilers		Liver	402		
	Ducks		Feed	5		
	Ducks		Liver	9		
	Hens		Feed	8		
	Hens		Liver	24		
	Turkeys		Feed	24		
	Turkeys		Liver	69		
A6 Annex IV						
Chloramphenicol	Broilers		Muscle	649	2	2.4, 2.6 (Chloramphenicol)
	Ducks		Muscle	16		
	Hens		Muscle	36		
	Turkeys		Muscle	49		

Nitrofurans	Broilers		Feed	286		
	Broilers		Muscle	545		
	Ducks		Feed	5		
	Ducks		Muscle	10		
	Hens		Feed	14		
	Hens		Muscle	36		
	Turkeys		Feed	30		
	Turkeys		Muscle	56		
Nitroimidazoles	Broilers		Feed	282		
	Broilers		Serum	909		
	Ducks		Feed	5		
	Ducks		Serum	17		
	Hens		Feed	14		
	Hens		Serum	36		
	Turkeys		Feed	29		
	Turkeys		Serum	73		
B1 Antimicrobial						
AMS1	Broilers		Muscle	1169		
	Ducks		Muscle	27		
	Hens		Muscle	83		
	Turkeys		Muscle	115		
Flofenicol	Broilers		Muscle	168		
	Turkeys		Muscle	12		
AMS2	Broilers		Muscle	524		
	Ducks		Muscle	10		
	Geese		Muscle	1		
	Hens		Muscle	32		
	Turkeys		Muscle	81		
Tiamulin	Broilers		Muscle	11		
B2A Anthelmintics						
Anthelmintics	Broilers		Liver	279		
	Ducks		Liver	9		
	Hens		Liver	30		
	Turkeys		Liver	74		
B2B Coccidiostats						
Coccidiostats	Broilers		Liver	1336	1	15 (Monensin)
	Hens		Liver	27		
	Turkeys		Liver	88		
B2C Pesticide Screen						
Pyrethroids + Carbamates	Broilers		Fat	8		
	Broilers		Liver	84		
	Ducks		Liver	8		
	Hens		Liver	8		
	Turkeys		Liver	16		
	Turkeys		Fat	1		
B2E NSAIDs						
	Broilers		Liver	6		
	Ducks		Liver	6		
	Hens		Liver	5		
	Turkeys		Liver	5		

B3A Pesticide Screen						
	Broilers		Fat	35		
	Broilers		Liver	257		
	Ducks		Liver	5		
	Hens		Liver	9		
	Turkeys		Liver	12		
	Turkeys		Fat	1		
B3C Heavy Metals						
Metals	Broilers		Muscle	81		
	Broilers		Liver	10		
	Ducks		Muscle	3		
	Hens		Muscle	3		
	Turkeys		Muscle	8		
B3D Mycotoxins						
Mycotoxins	Broilers		Liver	15		
	Hens		Liver	1		
	Turkeys		Liver	1		
EGGS						
Substance Group/Analyte	**Species**	**Age & Sex**	**Matrix**	**No of Analyses**	**No. above Action Level**	**Concentration where samples above the Action Level (µg/kg)**
A6 Annex IV						
Chloramphenicol	Eggs		Eggs	175		
Nitrofurans	Eggs		Eggs	144		
Nitroimidazoles	Eggs		Eggs	147		
B1 Antimicrobial						
AMS1	Eggs		Eggs	165		
Flofenicol	Eggs		Eggs	66		
AMS2	Eggs		Eggs	119		
AMS3	Eggs		Eggs	178		
Tiamulin	Eggs		Eggs	32		
B2A Fipronil						
Fipronil	Eggs		Eggs	108		
B2B Coccidiostats						
Coccidiostats	Eggs		Eggs	589	4 1	190, 230, 460, 790 (Lasalocid) 27 (Salinomycin)
B3A Pesticide Screen						
	Eggs		Eggs	61		
FISH						
Substance Group/Analyte	**Species**	**Age & Sex**	**Matrix**	**No of Analyses**	**No. above Action Level**	**Concentration where samples above the Action Level (µg/kg)**
A3 Hormones						
Methyltestosterone	Trout		Muscle & Skin	4		
A6 Annex IV						
Chloramphenicol	Salmon		Muscle & Skin	181		
	Trout		Muscle & Skin	17		
Nitrofurans	Salmon		Muscle & Skin	187		
	Trout		Muscle & Skin	4		

Nitroimidazoles	Salmon		Muscle & Skin	189		
	Trout		Muscle & Skin	8		
B1 Antimicrobial						
AMS1	Salmon		Muscle & Skin	113		
	Trout		Muscle & Skin	5		
AMS2	Salmon		Muscle & Skin	37		
	Trout		Muscle & Skin	5		
AMS3	Salmon		Muscle & Skin	192		
	Trout		Muscle & Skin	5		
	Turbot		Muscle & Skin	1		
Florfenicol	Salmon		Muscle & Skin	96		
B2A Anthelmintics						
Anthelmintics	Salmon		Muscle & Skin	118		
	Trout		Muscle & Skin	2		
Avermectins	Salmon		Muscle & Skin	104		
	Trout		Muscle & Skin	2		
B2C Pesticide Screen						
Pyrethroids	Salmon		Muscle & Skin	138		
B3A Pesticide Screen						
OCs/PCBs	Salmon		Muscle & Skin	12		
	Trout		Muscle & Skin	3		
B3B Pesticide Screen						
OPs	Salmon		Muscle & Skin	42		
B3C Heavy Metals						
Metals	Salmon		Muscle & Skin	24		
	Trout		Muscle & Skin	3		
B3D Mycotoxins						
Mycotoxins	Salmon		Muscle & Skin	9		
	Trout		Muscle & Skin	3		
B3E Dyes						
Dyes	Salmon		Muscle & Skin	234		
	Trout		Muscle & Skin	65		
MILK						
Substance Group/Analyte	**Species**	**Age & Sex**	**Matrix**	**No of Analyses**	**No. above Action Level**	**Concentration where samples above the Action Level (µg/kg/l)**
A6 Annex IV						
Chloramphenicol	Cattle		Milk	817		
	Goats		Milk	3		
	Sheep		Milk	8		
Dapsone	Cattle		Milk	23		
	Sheep		Milk	1		
	Goats		Milk	1		
B1 Antimicrobial						
AMS1	Cattle		Milk	474		
	Goats		Milk	2		
	Sheep		Milk	6		
Flofenicol	Cattle		Milk	136		
	Sheep		Milk	3		

AMS2	Cattle		Milk	257		
	Goats		Milk	2		
	Sheep		Milk	3		
AMS3	Cattle		Milk	335		
	Goats		Milk	1		
	Sheep		Milk	3		
AMS4	Cattle		Milk	207		
	Goats		Milk	1		
	Sheep		Milk	1		
Cefquinome	Cattle		Milk	142		
	Goats		Milk	2		
	Sheep		Milk	2		
Ceftiofur	Cattle		Milk	97		
	Sheep		Milk	1		
B2A Anthelmintics						
Anthelmintics	Cattle		Milk	373	2	61, 77 (Closantel)
	Goats		Milk	3		
	Sheep		Milk	6		
Avermectins	Cattle		Milk	279	2	6.5, 12 (Ivermectin)
	Goats		Milk	1		
	Sheep		Milk	3		
B2E NSAIDs						
	Cattle		Milk	163		
	Goats		Milk	1		
	Sheep		Milk	3		
B3A Pesticide Screen						
OCs/PCBs	Cattle		Milk	32		
	Goats		Milk	1		
	Sheep		Milk	1		
B3B Pesticide Screen						
OPs	Cattle		Milk	37		
	Sheep		Milk	1		
B3C Heavy Metals						
Metals	Cattle		Milk	41		
B3D Mycotoxins						
Mycotoxins	Cattle		Milk	37		

GAME

Substance Group/Analyte	Species	Age & Sex	Matrix	No of Analyses	No. above Action Level	Concentration where samples above the Action Level (ug/kg)
A2 Thyrostats						
Thyrostats	Deer		Liver	2		
A3 Hormones						
Steroid screen 2	Deer		Liver	4		
A5 Beta-Agonists						
	Deer		Liver	10		
A6 Annex IV						
Nitroimidazoles	Deer		Muscle	4		
B1 Antimicrobial						
AMS1	Deer		Kidney	25		

B2A Anthelmintics						
Anthelmintics	Deer		Liver	3		
	Partridge		Liver	4		
	Pheasant		Liver	5		
	Red Grouse		Liver	3		
B2B Coccidiostats						
Coccidiostats	Partridge		Muscle	5	2	51, 220 (Lasalocid)
	Pheasant		Muscle	5	1	290 (Lasalocid)
	Quail		Muscle	2		
B2C Pesticide Screen						
Pyrethroids	Deer		Kidney Fat	4		
B2D Sedatives						
	Deer		Liver	1		
B2E NSAIDs						
	Deer		Kidney	4		
B3A Pesticide Screen						
OCs/PCBs	Deer		Kidney Fat	7		
B3C Heavy Metals						
Metals	Deer		Muscle	6		
	Partridge		Muscle	5		
	Pheasant		Muscle	5		
	Wild Deer		Muscle	102	1	5000 (Metals)

Honey						
Substance Group/Analyte	**Species**	**Age & Sex**	**Matrix**	**No of Analyses**	**No. above Action Level**	**Concentration where samples above the Action Level (µg/kg)**
A6 Annex IV						
Chloramphenicol	Bees		Honey	9		
Nitrofurans	Bees		Honey	9		
B1 Antimicrobial						
AMS1	Bees		Honey	21		
AMS3	Bees		Honey	21		
AMS4	Bees		Honey	20		
AMS5	Bees		Honey	20		
B2C Pesticide Screen						
Pyrethroids	Bees		Honey	10		
B3A Pesticide Screen						
	Bees		Honey	12		
B3B Pesticide Screen						
OPs	Bees		Honey	13		
B3C Heavy Metals						
Metals	Bees		Honey	13		
B3F						
Amitraz	Bees		Honey	10		
Naphthalene	Bees		Honey	10		