



New Zealand National Chemical Residues Programme Report

Results for 1 July 2013 – 30 June 2014 for bovine, ovine, caprine, cervine, equine, porcine and wild animals, and ostriches, honey, farmed salmon, poultry, turkeys, and ducks

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Requests for further copies should be directed to:

Publications Logistics Officer
Ministry for Primary Industries
PO Box 2526
WELLINGTON 6140

Email: brand@mpi.govt.nz
Telephone: 0800 00 83 33
Facsimile: 04-894 0300

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ACRONYMS

ACVM	Agricultural Compounds and Veterinary Medicines (ACVM) Act 1997
APA	Animal Products Act 1999
MPI	Ministry for Primary Industries
MPI VS	Ministry for Primary Industries Verification Services
MRL Standards	New Zealand (Maximum Residue Limits of Agricultural Substances) Food Standards
NAIT	National Animal Identification and Tracing Act 2012
NCRP	National Chemical Residues Programme
MPL	New Zealand maximum permissible level

1 EXECUTIVE SUMMARY

The Ministry for Primary Industries (MPI) has a number of residue monitoring programmes associated with the Animal Products Act (APA), the Food Act and the Agricultural Compounds and Veterinary Medicines (ACVM) Act.

The residue monitoring programmes cover the full range of primary products (meat, seafood, honey, milk and dairy products), and fresh produce intended for export and domestic consumption, as well as general food, as consumed by the average New Zealand person.

These programmes are based on ensuring that we have the confidence and requisite assurance that food is safe and good agricultural practice (GAP) is being followed. MPI regularly reviews the programmes to consider new chemicals of interest, changing use patterns, new scientific information and trade requirements.

The National Chemical Residues Programme (NCRP) is a risk-based sampling and testing programme.

The monitoring component of the NCRP tested samples from randomly-selected farmed animals, wild animals, farmed salmon and honey.

The surveillance component tested samples from targeted at-risk animals, animal material or animal products.

Ongoing research and development designed to enhance the programme took place.

Samples were collected by persons authorised to do so and procedures are in place to ensure that traceability, security and quality management are maintained from collection through to analysis and storage.

Samples were analysed at laboratories contracted by MPI to do so. Contracted laboratories have ISO/IEC 17025 and International Accreditation New Zealand accreditation and are approved under the MPI Laboratory Approval Scheme. Laboratories providing testing services for the NCRP are also required to participate in Australian National Residue Survey proficiency testing programmes relevant to the overall residues programme.

A total of 3,013 samples were collected and tested for hundreds of agricultural compounds, veterinary medicines and environmental contaminants. Over 205,196 test results were obtained with just 5 non-compliant results. This represents a compliance rate in New Zealand of 99.998%. No food safety issues identified. The reported results from the NCRP confirm that good agricultural practices are being followed in the use of agricultural compounds and veterinary medicines.

The results of the species verification programme confirmed there was no species substitution.

2 NCRP – LEGAL FRAMEWORK

The programme is mandated by and managed in accordance with wide-ranging New Zealand legislation. The principle legislation is the Animal Products Act 1999 and its subsidiary regulations and notices. Legislation is listed on the MPI website¹ and full texts are available at the New Zealand Legislation website².

2.1 LEGISLATION RELEVANT TO NCRP

Primary Legislation (Act)	Activity	Secondary Legislation (Regulations)	Tertiary Legislation (Specifications or Notices)	Description
Animal Products Act 1999	Sampling and testing, Residue Programme Coordinators	Animal Products (Regulated Control Scheme - Contaminant Monitoring and Surveillance) Regulations 2004	Animal Products (Contaminant Monitoring and Surveillance) Notice 2013	The legal basis for creating an operational sampling plan for animals, animal material and animal products (excluding honey) to be implemented at randomly selected primary processors of meat and seafood, aquaculture farms and sale yards. This notice is renewed annually.
	Species Verification		Animal Products (Species Verification) 2014	The legal basis for sampling and testing raw boneless meat to confirm no species substitution
	Export MPLs (excluding honey)		Animal Products (Contaminant Specifications) Notice 2008	The legal basis for maximum (and default) permissible levels of residues and contaminants in animals, animal material and animal products intended for export.
	Laboratory		Laboratory Approval Scheme	Provides for MPI approval of laboratories providing testing services.
	Regulated Control Scheme for Hormonal Growth Promotants		Animal Products (Regulated Control Scheme - Hormonal Growth Promotants) Notice 2012	The legal basis for the identification and management of HGP treated animals to ensure export eligibility requirements are met.
	Regulated Control Scheme for Control of Specified Substances		Animal Products (Control of Specified Substances) Notice 2007	The legal basis for the prohibition of use of certain specified substances in food producing animals
	Regulated Control Scheme		Animal Products (Regulated Control Scheme – Verification of Contaminants in Bee Products for Exports) Notice 2013	The legal basis for creating an operational sampling plan for honey to be implemented at randomly selected suppliers of honey intended for domestic and export production, under the APA. This notice is renewed as required.

¹ <http://www.mpi.govt.nz/>

² <http://www.parliament.nz/en-nz/>

Primary Legislation (Act)	Activity	Secondary Legislation (Regulations)	Tertiary Legislation (Specifications or Notices)	Description
	Export MPLs (honey)		General requirement for export: 08/035 Contaminant Requirements for Bee Products for Export	The legal basis for maximum (and default) permissible levels of residues and contaminants in honey intended for export.
	Emergency Control Scheme		Animal Products (Emergency Control Scheme – Buparvaquone) Order 2013	The legal basis for the identification and management of BPQ treated animals to ensure export eligibility requirements are met.
	Authorisation of samplers		Animal Products (Export Requirement: Inspection Agencies Ante-mortem and Post-Mortem Inspection) Notice 2009	The legal basis for the collection of samples as a task associated with ante-mortem and post-mortem inspection.
	Procurement, slaughter and processing		Animal Products (Specifications For Products Intended For Human Consumption) Notice 2013	The legal basis for the procurement, slaughter and processing of animals, animal material and animal products for human consumption.
	Recognised Agency		Animal Products (Recognised Agencies and Persons Specifications) Notice 2011	The legal basis for agencies to provide powers for particular activities such as verification
Food Act 1981/FSANZ	Domestic MRLs		New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards 2013	The legal basis for maximum (and default) residue levels of residues and contaminants (not including metals) in food intended for domestic consumption.
	Domestic MLs		Australia NZ Food Standards Code - Standard 1.4.1 - Contaminants and Natural Toxicants	The legal basis for maximum levels of metal contaminants) in food intended for domestic consumption.
Food Act 2014				The Act will replace the Food Act 1981 on 1 March 2016. Specific sections relating to food recall and food safety incidents became effective in June 2014.
Agricultural Chemicals and Veterinary Medicines Act 1997	Registration of agricultural chemicals and veterinary medicines			This Act provides for the registration and label conditions of veterinary medicines and agricultural chemicals.
Hazardous Substances and New Organisms Act 1996				This Act has responsibility for imposing controls to limit exposure to a wide range of substances (including agricultural substances and veterinary medicines) to ensure public health and environmental safety

Primary Legislation (Act)	Activity	Secondary Legislation (Regulations)	Tertiary Legislation (Specifications or Notices)	Description
National Animal Identification and Tracing Act 2012				This Act provides for the identification of cattle and deer using radio-frequency identification (RFID) ear tags as well as obligations that participants in the NAIT scheme must meet, for example, registering as a person in charge of animals. NAIT identification for BPQ and HGP treated animals is used to identify these animals at slaughter.
Veterinarians Act 2005				This Act provides for registration of veterinarians in New Zealand. Under this Act, and in accordance with their registration, veterinarians must perform to specified professional standards.

3 ACTIONS TAKEN WHEN RESULTS ARE NON COMPLIANT

3.1 NON-COMPLIANCE DEFINED

Residue non-compliances occur when the test results exceed the thresholds specified in applicable legislation.

Exported animal material or animal products must comply with:

- Animal Products (Contaminant Specifications) Notice 2008.
- General Requirement for Export: 08/035 Contaminant Requirements for Bee Products for Export.
- Any Notice issued under Section 60A of the APA.

Domestically-produced food sold in New Zealand must comply with:

- The New Zealand (Maximum Residue Limits of Agricultural Substances) Food Standards (the MRL Standards). These standards list the MRLs for a range of agricultural substances, but also include a provision for residues of up to 0.1 mg/kg for agricultural substance/food combinations not specifically listed.
- The Australia New Zealand Food Standards Code, Standard 1.4.1: Contaminants and natural toxicants. This standard lists the maximum levels for metal contaminants in food.

3.2 CORRECTIVE ACTIONS

When non-complying residues are identified, a traceback is initiated and the residue finding investigated.

The most common regulatory action taken against the suppliers of animals from which non-complying residues were found is to place them on the MPI surveillance list.

Suppliers remain on the surveillance list until surveillance sampling has confirmed that there are no further residue detections which exceed the regulatory limit in supplied animals as well as acceptable measures have been put in place to prevent reoccurrence of the non-compliance.

In some situations MPI gives consideration to prosecuting offenders and, where appropriate, animals may be subject to movement restrictions. Animals under movement restrictions may not be moved from a property without MPI authorisation and may require to be specially identified.

4 SAMPLE COLLECTED AND COMPOUNDS TESTED FOR ACROSS ALL MONITORING PROGRAMMES

Sampling programme	Number of samples collected	Number of compounds reported
Bee 2013/2014	132	3 070
Farmed Salmon 2013/2014	120	1 030
Meat 2013/2014	2 657	18 9612
Ostriches + Emu's 2013/2014	2	1 002
Poultry 2013/2014	102	10 482
Total	3 013	205 196

5 RESULTS OF THE MONITORING, SURVEILLANCE & SPECIES VERIFICATION PROGRAMMES

5.1 MONITORING PROGRAMME – LIVE BOVINE ANIMALS

Total number of samples & tests planned and reported for 2013/2014 – Live cattle			
	Planned	Completed*	Positive > NZ MPL
Stilbenes, steroids and RALs	50	43	0
Beta-agonists	50	43	0
Phenicol	50	43	0
NSAIDs	50	43	0

* In 2013/2014 some randomly allocated samples were not able to be collected. Additional samples will be collected in 2014/2015 to make up the deficit.

5.2 MONITORING PROGRAMME – BOVINE ANIMALS

Total number of samples & tests planned and reported for 2013/2014 – Bovine			
	Planned	Completed	Positive > NZ MPL
Stilbenes, steroids and RALs	75	79	0
HGPs	75	79	0
Beta-agonists	75	78	0
Phenicol	75	78	0
Nitrofurans	100	101	0
Antibiotics	100	107	0
Ceftiofur	25	25	0
Sulphonamides	60	61	0
Anthelmintics	100	100	0
Anticoccidials	175	183	0
Anticoccidials (halofuginone)	25	25	0
Carbadox	25	25	0
NSAIDs	25	26	0
Pesticides	150	151	0
Heavy Metals	50	48	0

5.3 MONITORING PROGRAMME – OVINE ANIMALS

Total number of samples & tests planned and reported for 2013/2014 – Ovine			
	Planned	Completed	Positive > NZ MPL
Stilbenes, steroids and RALs	75	77	0
Beta-agonists	75	78	0
Phenicol	75	80	0
Nitrofurans	100	109	0
Antibiotics	75	75	0
Anthelmintics	100	100	0
Anticoccidials	25	28	0
Pesticides	50	51	0
Heavy Metals	50	48	0

5.4 MONITORING PROGRAMME – CAPRINE ANIMALS

Total number of samples & tests planned and reported for 2013/2014 – Caprine			
	Planned	Completed	Positive > NZ MPL
Stilbenes, steroids and RALs	28	23	0
Beta-agonists	28	26	0
Phenicol	28	26	0
Nitrofurans	28	25	0
Antibiotics	28	30	0
Anthelmintics	28	27	0
Anticoccidials	28	27	0
Pesticides	28	26	0
Heavy Metals	28	26	3 (a)

* In 2013/2014 due to the intermittent supply of goats, some randomly allocated samples were not able to be collected. Additional samples will be collected in 2014/2015 to make up the deficit, if possible.

(a) Three detections of cadmium above the New Zealand MPL.

5.5 MONITORING PROGRAMME – CERVINE ANIMALS

Total number of samples & tests planned and reported for 2013/2014 – Cervine			
	Planned	Completed	Positive > NZ MPL
Stilbenes, steroids and RALs	75	76	0
HGP (deer)	25	31	0
Beta-agonists	75	78	0
Phenicol	75	78	0
Nitrofurans	75	78	0
Antibiotics	75	76	0
Anthelmintics	75	74	0
Anticoccidials	50	51	0
NSAIDs	25	30	0
Pesticides	75	77	0
Heavy Metals	25	27	1 (a)

(a) One detection of lead above the New Zealand MPL.

5.6 MONITORING PROGRAMME – EQUINE ANIMALS

Total number of samples & tests planned and reported for 2013/2014 – Equine			
	Planned	Completed	Positive > NZ MPL
Stilbenes, steroids and RALs	50	50	0
Beta-agonists	50	50	0
Phenicol	50	50	0
Nitrofurans	50	50	0
Nitroimidizoles	25	25	0
Antibiotics	25	25	0
Virginiamycin	50	50	0
Anthelmintics	25	25	0
NSAIDs	25	24	0

5.7 MONITORING PROGRAMME – WILD ANIMALS

Total number of samples & tests planned and reported for 2013/2014 – Wild animals			
	Planned	Completed	Positive > NZ MPL
1080	20	22	0
Anticoagulants	31	31	0
Heavy metals	21	21	0

5.8 MONITORING PROGRAMME – AQUACULTURE

Total number of samples & tests planned and reported for 2013/2014 – Farmed salmon			
	Planned	Completed	Positive > NZ MPL
Stilbenes, steroids and RALs	10	10	0
Phenicol	10	10	0
Nitrofurans	10	10	0
Nitroimidizoles	10	10	0
Antibiotics	20	20	0
Isoeugenol	20	20	0
Pesticides	20	20	0
Dyes	20	20	0

5.9 MONITORING PROGRAMME – OSTRICHES

Total number of samples & tests planned and reported for 2013/2014 – Ostriches			
	Planned	Completed	Positive > NZ MPL
Beta-agonists	2	2	0
Nitrofurans	2	2	0
Nitroimidizoles	2	2	0
Anthelmintics	3	3	0
Pesticides	3	3	0

5.10 MONITORING PROGRAMME – PORCINE ANIMALS

Total number of samples & tests planned and reported for 2013/2014 – Porcine			
	Planned	Completed	Positive > NZ MPL
Beta-agonists	25	27	0
Nitrofurans	25	26	0
Nitroimidizoles	25	26	0
Antibiotics	25	28	0
Anticoccidials	25	26	0
Carbadox	25	26	0
Pesticides	25	26	0

5.11 MONITORING PROGRAMME – POULTRY, TURKEYS & DUCKS

Total number of samples & tests planned and reported for 2013/2014 – Poultry, turkeys & ducks			
	Planned	Completed	Positive > NZ MPL
Stilbenes, steroids and RALs	20	20	0
Nitrofurans	20	22	0
Antibiotics	20	20	0
Anticoccidials	20	21	0
Pesticides	20	21	0

5.12 MONITORING PROGRAMME – HONEY

Total number of samples & tests planned and reported for 2013/2014 – Honey			
	Planned	Completed	Positive > NZ MPL
Phenolics	7	7	0
Nitrofurans	7	7	0
Antibiotics	69	66	0
Pesticides + Neonicotinoids	20	18	0
Heavy Metals	15	13	0
Amitraz	20	20	1 (a)

(a) One detection of amitraz above the New Zealand MPL but below the New Zealand MRL.

5.13 MONITORING PROGRAMME – ALPACA

A small numbers of alpacas are slaughtered for domestic consumption on a one-off basis. One sample was tested for pesticides and anthelmintics and no results above the New Zealand MPL were detected.

5.14 SURVEILLANCE PROGRAMME

The surveillance programme of the NCRP tested samples from targeted animal material, animal products or animals considered to be at-risk for non-complying residues or contaminants, supplied by persons on the MPI surveillance list.

Total number of surveillance samples reported for 2013/2014				
	Bovine	Ovine	Cervine	On farm
Pesticides	1 (b)			
Heavy Metals			1 (a)	

(a) Sample from a cervine animal supplied by a person on the MPI surveillance list (lead). The result was below the New Zealand MPL.

(b) Sample from a bovine animal supplied by a person on the MPI surveillance list (triflumuron). No triflumuron was detected.

5.15 SPECIES VERIFICATION PROGRAMME

The test results verified there was no species substitution.

Number of samples collected 2013/2014*	Number of samples tested
295	295

* Some samples were rejected due to insufficient amount of matrix (meat) to test which meant that the full complement of 300 samples were not analysed. Additional samples to make up the 2013/2014 deficit will be collected in 2014/15.

6 RESULTS WHICH EXCEEDED REGULATORY LIMITS

Substance and amount detected	Animal or animal product sampled	NZ Maximum Permissible Level
Lead - 1.98mg/kg	Cervine (liver)	0.5 mg/kg*
Cadmium – 0.82 mg/kg	Caprine (liver)	0.25 mg/kg**
Cadmium – 0.45 mg/kg	Caprine (liver)	0.25 mg/kg**
Cadmium – 0.31 mg/kg	Caprine (liver)	0.25 mg/kg**
Amitraz – 0.18 mg/kg	Honey	0.2 mg/kg***

* The New Zealand MPL for lead is 0.5 mg/kg in edible offal of cattle, sheep, pig and poultry.

** The New Zealand MPL for cadmium is 1.25 mg/kg in liver of cattle, sheep and pig.

*** One sample did not exceed the New Zealand maximum permissible levels defined in the General Requirements for Export notice 08/035 *Contaminant Requirements for Bee Products for Export* but exceeded the New Zealand maximum residue level defined in the New Zealand (Maximum Residue Limits of Agricultural Compounds) Food Standards 2015

6.1 MPI ACTIONS FOR NON-COMPLIANT TEST RESULTS

6.1.1 Lead

Lead is ubiquitous in the environment and background levels are reported in routine monitoring in New Zealand.

One result above the New Zealand MPL of 0.5 mg/kg was reported in a sample from a farmed red deer hind. The traceback investigation was unable to identify a specific cause. The farm is grass based, with no non-grass based supplementary feeding. There was no evidence of lead sources such as old batteries and other farm rubbish. The supplier was placed on the national surveillance list.

In the targeted surveillance samples collected from deer sent for slaughter by the supplier lead results were below the New Zealand MPL. The supplier was removed from the surveillance list after the results were received.

6.1.2 Cadmium

Cadmium is ubiquitous in the environment and background levels are reported in routine monitoring in New Zealand.

Three results above the New Zealand MPL of 0.25 mg/kg for goat offal were reported in samples from farmed goats. Investigations into the source of the goats were done. In all cases, the goats were sourced from grass-based farms. There are no unexpected sources of cadmium on grass-based farms.

Cattle, deer, sheep and goats are farmed on the same properties in New Zealand, with a predominantly grass-based feed source. Detection levels of cadmium, as a ubiquitous environmental contaminant, would be expected to be equivalent in all these species. The NZ MPL for ruminants other than goats is set with a wide margin of food safety. There is no justification to continue with a lower MPL just for goats, so the New Zealand MPL for cadmium in goats will be amended so that they are the same as that for cattle and sheep. As the level of cadmium reported in the goat samples were below the New Zealand MPL for other ruminants, the suppliers of these goats were not placed on the national surveillance list.

6.1.3 Amitraz

Amitraz is registered for use in New Zealand as impregnated honey strips for use in beehives to control the parasitic mite (*Varroa destructor*) on honey bees.

One result above the New Zealand maximum residue level of 0.1 mg/kg was reported in a honey sample. The traceback investigation was unable to identify a specific cause as use of the chemical was in accordance with label requirements.

MPI is reviewing the international regulatory limits for amitraz, and the use of amitraz in New Zealand beehives. Once this has been completed, a consistent regulatory limit applying to both the New Zealand maximum residue level and the New Zealand MPL will be determined.