# Beef residue testing annual datasets 2014–15

National Residue Survey, Department of Agriculture and Water Resources

## Dataset abbreviations

**LOR** Limit of reporting.

**MRL** Maximum Residue Limit.

**no limit** No Australian Standard applicable for the contaminant. The ‘as low as reasonably achievable’ principle applies. Detections at low levels are allowable.

**not defined** Standards are not defined in inedible matrixes (urine and faeces).

**not set** No Australian Standard has been set for the chemical in the edible matrix and any detection is a contravention of the Australia New Zealand Food Standards Code.

## Disclaimer

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Table 1 Anthelmintics

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| abamectin | fat | 0.005 | 0.1 | 330 | 0 | 0 | 0 |
| albendazole | liver | 0.001 | 0.1 | 330 | 1 | 0 | 0 |
| closantel | liver | 0.05 | not set | 330 | 0 | 0 | 0 |
| derquantel | fat | 0.005 | not set | 330 | 0 | 0 | 0 |
| doramectin | fat | 0.005 | 0.1 | 330 | 6 | 0 | 0 |
| emamectin | fat | 0.005 | 0.01 | 330 | 0 | 0 | 0 |
| eprinomectin | fat | 0.005 | 0.5 | 330 | 0 | 0 | 0 |
| fenbendazole | liver | 0.001 | 0.1 | 330 | 6 | 0 | 0 |
| ivermectin | fat | 0.005 | 0.04 | 330 | 1 | 1 | 0 |
| levamisole | liver | 0.001 | 1 | 330 | 1 | 0 | 0 |
| mebendazole | liver | 0.005 | 0.02 | 330 | 0 | 0 | 0 |
| mebendazole, 5-hydroxy | liver | 0.005 | not set | 330 | 0 | 0 | 0 |
| milbemectin | fat | 0.01 | 0.002 | 280 | 0 | 0 | 0 |
| monepantel sulphone | fat | 0.005 | not set | 330 | 0 | 0 | 0 |
| morantel | liver | 0.001 | 2 | 330 | 0 | 0 | 0 |
| moxidectin | fat | 0.005 | 1 | 330 | 18 | 0 | 0 |
| oxfendazole | liver | 0.001 | 3 | 330 | 1 | 0 | 0 |
| oxibendazole | liver | 0.001 | not set | 330 | 0 | 0 | 0 |
| praziquantel | fat | 0.005 | not set | 330 | 0 | 0 | 0 |
| thiabendazole-A | liver | 0.01 | 0.2 | 330 | 0 | 0 | 0 |
| triclabendazole | liver | 0.05 | 2 | 330 | 0 | 0 | 0 |

Table 2 Antibiotics

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 4-epichlortetracycline | kidney | 0.01 | 0.6 | 970 | 0 | 0 | 0 |
| 4-epioxytetracycline | kidney | 0.01 | 0.6 | 970 | 1 | 0 | 0 |
| 4-epitetracycline | kidney | 0.01 | not set | 970 | 0 | 0 | 0 |
| AHD | retina | 0.002 | not defined | 50 | 0 | – | – |
| amoxicillin | kidney | 0.01 | 0.01 | 970 | 0 | 0 | 0 |
| AMOZ | retina | 0.002 | not defined | 50 | 0 | – | – |
| ampicillin | kidney | 0.01 | not set | 970 | 0 | 0 | 0 |
| amprolium | liver | 0.01 | not set | 330 | 0 | 0 | 0 |
| AOZ | retina | 0.002 | not defined | 50 | 0 | – | – |
| apramycin | kidney | 0.5 | 2 | 970 | 0 | 0 | 0 |
| avilamycin | kidney | 0.1 | not set | 970 | 0 | 0 | 0 |
| benzyl G penicillin | kidney | 0.01 | 0.06 | 970 | 0 | 0 | 0 |
| ceftiofur | kidney | 0.2 | 2 | 970 | 0 | 0 | 0 |
| cefuroxime | kidney | 0.05 | 0.1 | 970 | 0 | 0 | 0 |
| cephalonium | kidney | 0.05 | 0.1 | 970 | 0 | 0 | 0 |
| chloramphenicol | muscle | 0.0003 | not set | 429 | 0 | 0 | 0 |
| chlortetracycline | kidney | 0.01 | 0.6 | 970 | 2 | 0 | 0 |
| cloxacillin | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| dihydrostreptomycin | kidney | 0.1 | 0.3 | 970 | 0 | 0 | 0 |
| doxycycline | kidney | 0.01 | not set | 970 | 0 | 0 | 0 |
| erythromycin | kidney | 0.1 | 0.3 | 970 | 0 | 0 | 0 |
| florfenicol | muscle | 0.0043 | 0.3 | 429 | 1 | 0 | 0 |
| gentamycin | kidney | 0.1 | not set | 970 | 0 | 0 | 0 |
| halofuginone | liver | 0.01 | 0.03 | 330 | 0 | 0 | 0 |
| lasalocid | liver | 0.01 | 0.7 | 330 | 0 | 0 | 0 |
| lincomycin | kidney | 0.1 | 0.2 | 970 | 0 | 0 | 0 |
| maduramicin | liver | 0.01 | not set | 330 | 0 | 0 | 0 |
| monensin | liver | 0.01 | 0.05 | 330 | 16 | 0 | 0 |
| narasin | liver | 0.01 | 0.05 | 330 | 0 | 0 | 0 |
| neomycin | kidney | 0.1 | 10 | 970 | 2 | 0 | 0 |
| nicarbazin | liver | 0.01 | not set | 330 | 0 | 0 | 0 |
| oleandomycin | kidney | 0.2 | 0.1 | 970 | 0 | 0 | 0 |
| oxytetracycline | kidney | 0.01 | 0.6 | 970 | 1 | 0 | 1 |
| salinomycin | liver | 0.01 | 0.5 | 330 | 0 | 0 | 0 |
| SEM | retina | 0.002 | not defined | 50 | 0 | – | – |
| semduramycin | liver | 0.01 | not set | 330 | 0 | 0 | 0 |
| streptomycin | kidney | 0.1 | 0.3 | 970 | 0 | 0 | 0 |
| sulfachloropyridazine | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfadiazine | kidney | 0.05 | 0.1 | 970 | 0 | 0 | 0 |
| sulfadimethoxine | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfadimidine | kidney | 0.05 | 0.1 | 970 | 0 | 0 | 0 |
| sulfadoxine | kidney | 0.05 | 0.1 | 970 | 0 | 0 | 0 |
| sulfafurazole | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfamerazine | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfamethoxazole | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfamethoxydiazine | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfamethoxypyridazine | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfapyridine | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfaquinoxaline | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfathiazole | kidney | 0.05 | not set | 970 | 0 | 0 | 0 |
| sulfatroxazole | kidney | 0.05 | 0.1 | 970 | 0 | 0 | 0 |
| tetracycline | kidney | 0.01 | not set | 970 | 0 | 0 | 0 |
| thiamphenicol | muscle | 0.0029 | not set | 429 | 0 | 0 | 0 |
| tilmicosin | kidney | 0.2 | 1 | 970 | 0 | 0 | 0 |
| trimethoprim | kidney | 0.05 | not set | 702 | 0 | 0 | 0 |
| tulathromycin | kidney | 0.3 | 1 | 970 | 0 | 0 | 0 |
| tylosin | kidney | 0.1 | 0.1 | 970 | 0 | 0 | 0 |
| virginiamycin | kidney | 0.2 | 0.2 | 970 | 0 | 0 | 0 |

Table 3 Contaminants

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| aldrin and dieldrin | fat | 0.02 | 0.2 | 1115 | 3 | 0 | 0 |
| arochlor 1254 | fat | 0.03 | not set | 1115 | 0 | 0 | 0 |
| arochlor 1260 | fat | 0.03 | not set | 1115 | 0 | 0 | 0 |
| chlordane | fat | 0.02 | 0.2 | 1115 | 0 | 0 | 0 |
| DDT | fat | 0.05 | 5 | 1115 | 9 | 0 | 0 |
| endrin | fat | 0.01 | not set | 1115 | 0 | 0 | 0 |
| HCB | fat | 0.02 | 1 | 1115 | 0 | 0 | 0 |
| HCH | fat | 0.02 | 0.3 | 1115 | 0 | 0 | 0 |
| heptachlor | fat | 0.02 | 0.2 | 1115 | 0 | 0 | 0 |
| lindane | fat | 0.01 | 2 | 1115 | 0 | 0 | 0 |
| mirex | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |
| pentachlorobenzene | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |

Table 4 Fluoroquinolones

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| norfloxacin | kidney | 0.01 | not set | 134 | 0 | 0 | 0 |

Table 5 Fungicides

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| boscalid | fat | 0.01 | 0.3 | 1115 | 0 | 0 | 0 |
| carbendazim | fat | 0.01 | 0.2 | 1115 | 0 | 0 | 0 |
| cyproconazole | fat | 0.02 | 0.03 | 1115 | 0 | 0 | 0 |
| fluquinconazole | fat | 0.01 | 0.5 | 1115 | 2 | 0 | 0 |
| flutriafol | fat | 0.02 | 0.05 | 1115 | 0 | 0 | 0 |
| fluxapyroxad | fat | 0.01 | 0.05 | 1115 | 0 | 0 | 0 |
| procymidone | fat | 0.02 | 0.2 | 1115 | 0 | 0 | 0 |
| propiconazole | fat | 0.05 | 0.1 | 1115 | 0 | 0 | 0 |
| prothioconazole | fat | 0.02 | 0.02 | 1115 | 0 | 0 | 0 |
| quintozene | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |

Table 6 Herbicides

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ethofumesate | fat | 0.02 | 0.5 | 1115 | 0 | 0 | 0 |
| metolachlor | fat | 0.02 | 0.05 | 1115 | 0 | 0 | 0 |
| propachlor | fat | 0.02 | 0.02 | 1115 | 0 | 0 | 0 |
| pyrasulfotole | fat | 0.01 | 0.01 | 1115 | 0 | 0 | 0 |

Table 7 Hormones

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 16-hydroxystanozolol | urine | 0.001 | not defined | 430 | 0 | – | – |
| boldenone 17α | urine | 0.001 | not defined | 430 | 0 | – | – |
| boldenone 17β  | urine | 0.001 | not defined | 430 | 0 | – | – |
| dienoestrol | liver | 0.0002 | not set | 430 | 0 | 0 | 0 |
| diethylstilboestrol | liver | 0.0002 | not set | 430 | 0 | 0 | 0 |
| hexoestrol | liver | 0.0002 | not set | 430 | 0 | 0 | 0 |
| methandriol | urine | 0.005 | not defined | 430 | 0 | – | – |
| nortestosterone-17 alpha | urine | 0.001 | not defined | 430 | 0 | – | – |
| nortestosterone-17 beta | urine | 0.001 | not defined | 430 | 0 | – | – |
| stanozolol | urine | 0.001 | not defined | 430 | 0 | – | – |
| trenbolone | liver | 0.0005 | 0.01 | 471 | 2 | 0 | 0 |
| trenbolone | muscle | 0.0005 | 0.002 | 1 | 0 | 0 | 0 |
| zeranol | liver | 0.002 | 0.02 | 471 | 2 | 1 | 0 |
| zeranol | muscle | 0.002 | 0.005 | 1 | 0 | 0 | 0 |

Table 8 Insecticides

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| bifenthrin | fat | 0.02 | 2 | 1115 | 0 | 0 | 0 |
| bioresmethrin | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |
| carbaryl | fat | 0.01 | 0.2 | 1115 | 0 | 0 | 0 |
| chlorantraniliprole | fat | 0.01 | 0.02 | 1115 | 0 | 0 | 0 |
| chlorfenapyr | fat | 0.02 | 0.05 | 1115 | 0 | 0 | 0 |
| chlorfenvinphos | fat | 0.02 | 0.2 | 1115 | 0 | 0 | 0 |
| chlorfluazuron | fat | 0.01 | 1 | 330 | 0 | 0 | 0 |
| chlorpyrifos | fat | 0.02 | 0.5 | 1115 | 0 | 0 | 0 |
| chlorpyrifos-methyl | fat | 0.02 | 0.05 | 1115 | 1 | 0 | 0 |
| coumaphos | fat | 0.02 | 0.02 | 1115 | 0 | 0 | 0 |
| cyfluthrin | fat | 0.02 | 0.5 | 1115 | 1 | 0 | 0 |
| cyhalothrin | fat | 0.02 | 0.5 | 1115 | 0 | 0 | 0 |
| cypermethrin | fat | 0.02 | 0.5 | 1115 | 3 | 0 | 0 |
| cyromazine | kidney | 0.01 | 0.05 | 330 | 0 | 0 | 0 |
| deltamethrin | fat | 0.02 | 0.5 | 1115 | 1 | 0 | 0 |
| diafenthiuron | fat | 0.02 | not set | 955 | 0 | 0 | 0 |
| diazinon | fat | 0.02 | 0.7 | 1115 | 8 | 0 | 0 |
| dichlorvos | fat | 0.02 | 0.05 | 1115 | 0 | 0 | 0 |
| dicofol | fat | 0.01 | not set | 1115 | 0 | 0 | 0 |
| dicyclanil | kidney | 0.01 | not set | 330 | 0 | 0 | 0 |
| diflubenzuron | fat | 0.01 | 0.02 | 330 | 0 | 0 | 0 |
| dimethoate | fat | 0.02 | 0.05 | 1115 | 0 | 0 | 0 |
| endosulfan | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |
| esfenvalerate | fat | 0.02 | 1 | 1091 | 0 | 0 | 0 |
| ethion | fat | 0.02 | 2.5 | 1115 | 3 | 0 | 0 |
| famphur | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |
| famphur oxygen-analogue | fat | 0.05 | not set | 1091 | 0 | 0 | 0 |
| fenitrothion | fat | 0.02 | 0.05 | 1115 | 0 | 0 | 0 |
| fenthion | fat | 0.02 | 1 | 1115 | 0 | 0 | 0 |
| fenvalerate | fat | 0.02 | 1 | 1115 | 0 | 0 | 0 |
| fipronil | fat | 0.02 | 0.1 | 1115 | 0 | 0 | 0 |
| fluazuron | fat | 0.01 | 7 | 330 | 20 | 0 | 0 |
| flubendiamide | fat | 0.01 | 0.05 | 1115 | 0 | 0 | 0 |
| flumethrin | fat | 0.05 | 0.2 | 1115 | 0 | 0 | 0 |
| imidacloprid | fat | 0.01 | 0.05 | 1115 | 0 | 0 | 0 |
| indoxacarb | fat | 0.02 | 1 | 1115 | 0 | 0 | 0 |
| malathion | fat | 0.02 | 1 | 1115 | 0 | 0 | 0 |
| melamine | kidney | 0.01 | not set | 330 | 0 | 0 | 0 |
| methidathion | fat | 0.02 | 0.5 | 1115 | 0 | 0 | 0 |
| methoxychlor | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |
| omethoate | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |
| parathion-methyl | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |
| permethrin | fat | 0.02 | 1 | 1115 | 3 | 0 | 0 |
| phosmet | fat | 0.02 | 1 | 1115 | 0 | 0 | 0 |
| pirimiphos-methyl | fat | 0.02 | 0.05 | 1115 | 0 | 0 | 0 |
| prothiofos | fat | 0.01 | not set | 1115 | 0 | 0 | 0 |
| pyraclofos | fat | 0.02 | not set | 1115 | 0 | 0 | 0 |
| spinetoram | fat | 0.005 | 2 | 330 | 0 | 0 | 0 |
| spinosad | fat | 0.005 | 2 | 330 | 38 | 0 | 0 |
| spirotetramat | fat | 0.02 | 0.02 | 1115 | 0 | 0 | 0 |
| sulfoxaflor | fat | 0.01 | not set | 507 | 0 | 0 | 0 |
| tau-fluvalinate | fat | 0.01 | not set | 1115 | 0 | 0 | 0 |
| temephos | fat | 0.02 | 5 | 1115 | 0 | 0 | 0 |
| triflumuron | fat | 0.01 | 0.05 | 330 | 0 | 0 | 0 |

Table 9 Metals

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| antimony | liver | 0.01 | no limit | 330 | 0 | 0 | 0 |
| arsenic | liver | 0.05 | no limit | 330 | 0 | 0 | 0 |
| cadmium | liver | 0.01 | 1.25 | 330 | 263 | 3 | 0 |
| lead | liver | 0.01 | 0.5 | 330 | 156 | 2 | 1 |
| mercury | liver | 0.01 | no limit | 330 | 0 | 0 | 0 |

Table 10 Mycotoxins

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| taleranol | liver | 0.002 | no limit | 471 | 0 | 0 | 0 |
| taleranol | muscle | 0.002 | no limit | 1 | 0 | 0 | 0 |
| zearalenol, alpha- | liver | 0.002 | no limit | 471 | 0 | 0 | 0 |
| zearalenol, alpha- | muscle | 0.002 | no limit | 1 | 0 | 0 | 0 |
| zearalenol, beta- | liver | 0.002 | no limit | 471 | 0 | 0 | 0 |
| zearalenol, beta- | muscle | 0.002 | no limit | 1 | 0 | 0 | 0 |
| zearalanone | liver | 0.002 | no limit | 471 | 0 | 0 | 0 |
| zearalanone | muscle | 0.002 | no limit | 1 | 0 | 0 | 0 |
| zearalenone | Liver | 0.002 | no limit | 471 | 0 | 0 | 0 |
| zearalenone | muscle | 0.002 | no limit | 1 | 0 | 0 | 0 |
| taleranol | liver | 0.002 | no limit | 471 | 0 | 0 | 0 |
| taleranol | muscle | 0.002 | no limit | 1 | 0 | 0 | 0 |
| zearalenol, alpha- | liver | 0.002 | no limit | 471 | 0 | 0 | 0 |

Table 11 Other veterinary drugs

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > LOR to ≤ ½ MRL | > ½ MRL to ≤ MRL | > MRL |
| --- | --- | --- | --- | --- | --- | --- | --- |
| cimaterol | liver | 0.0003 | not set | 430 | 0 | 0 | 0 |
| clenbuterol | liver | 0.0003 | not set | 430 | 0 | 0 | 0 |
| flunixin | kidney | 0.01 | 0.02 | 330 | 0 | 0 | 0 |
| ketoprofen | kidney | 0.01 | 0.05 | 330 | 0 | 0 | 0 |
| mabuterol | liver | 0.0003 | not set | 430 | 0 | 0 | 0 |
| oxyphenbutazone | kidney | 0.01 | not set | 330 | 0 | 0 | 0 |
| phenylbutazone | kidney | 0.01 | not set | 330 | 0 | 0 | 0 |
| ractopamine | liver | 0.0003 | not set | 430 | 0 | 0 | 0 |
| salbutamol | liver | 0.001 | not set | 430 | 0 | 0 | 0 |
| tolfenamic acid | kidney | 0.005 | 0.01 | 330 | 0 | 0 | 0 |
| zilpaterol | liver | 0.0003 | not set | 430 | 0 | 0 | 0 |