Australian Government

Department of Agriculture, Fisheries and Forestry

# Apple residue testing annual datasets 2023-24

National Residue Survey (NRS), Department of Agriculture, Fisheries and Forestry

## 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, retina 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



### Table 1: CONTAMINANTS

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | Number of samples tested | >½MRL to ≤MRL | >MRL |
|---|---|---|---|---|---|---|
| aldrin and dieldrin (HHDN+HEOD) | Whole | 0.01 | 0.05 | 166 | 0 | 0 |
| chlordane | Whole | 0.01 | 0.02 | 166 | 0 | 0 |
| DDT | Whole | 0.01 | 1 | 166 | 0 | 0 |
| endosulfan | Whole | 0.01 | not set | 166 | - | - |
| endrin | Whole | 0.01 | not set | 166 | - | - |
| HCB (hexachlorobenzene) | Whole | 0.01 | not set | 166 | - | - |
| HCH (BHC) | Whole | 0.01 | not set | 166 | - | - |
| heptachlor | Whole | 0.01 | not set | 166 | - | - |
| lindane (gamma-HCH) | Whole | 0.01 | 2 | 166 | 0 | 0 |
| mirex | Whole | 0.01 | not set | 166 | - | - |

## Table 2: FUNGICIDES

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | Number of samples tested | >½MRL to ≤MRL | >MRL |
|---|---|---|---|---|---|---|
| 2-phenylphenol | Whole | 0.05 | not set | 166 | - | - |
| azoxystrobin | Whole | 0.01 | not set | 166 | - | - |
| benalaxyl | Whole | 0.01 | not set | 166 | - | - |
| bitertanol | Whole | 0.01 | not set | 166 | - | - |
| boscalid | Whole | 0.01 | 2 | 166 | 0 | 0 |
| bupirimate | Whole | 0.01 | 1 | 166 | 0 | 0 |
| captafol | Whole | 0.05 | not set | 166 | - | - |
| captan | Whole | 0.05 | 10 | 166 | 1 | 0 |
| carbendazim | Whole | 0.01 | not set | 166 | - | - |
| chlorothalonil | Whole | 0.01 | not set | 166 | - | - |
| cyproconazole | Whole | 0.01 | not set | 166 | - | - |
| cyprodinil | Whole | 0.01 | 1 | 166 | 0 | 0 |
| difenoconazole | Whole | 0.01 | 0.3 | 166 | 0 | 0 |
| dimethomorph | Whole | 0.01 | not set | 166 | - | - |
| dithianon | Whole | 0.01 | 2 | 166 | 0 | 0 |
| dithiocarbamates | Whole | 0.2 | 3 | 166 | 4 | 0 |
| dodine | Whole | 0.01 | 5 | 166 | 0 | 0 |
| epoxiconazole | Whole | 0.01 | not set | 166 | - | - |
| etridiazole | Whole | 0.01 | not set | 166 | - | - |
| fenarimol | Whole | 0.01 | not set | 166 | - | - |
| fenbuconazole | Whole | 0.01 | not set | 166 | - | - |
| fenhexamid | Whole | 0.01 | not set | 166 | - | - |
| fluazinam | Whole | 0.01 | 0.01 | 166 | 0 | 0 |
| fludioxonil | Whole | 0.01 | 5 | 166 | 1 | 0 |
| fluopyram | Whole | 0.01 | 1 | 166 | 0 | 0 |
| fluquinconazole | Whole | 0.01 | 0.3 | 166 | 0 | 0 |
| flusilazole | Whole | 0.01 | 0.2 | 166 | 0 | 0 |
| flutriafol | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| fluxapyroxad | Whole | 0.01 | 0.7 | 76 | 0 | 0 |
| hexaconazole | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| imazalil | Whole | 0.01 | 5 | 166 | 0 | 0 |
| iprodione | Whole | 0.01 | 3 | 166 | 2 | 2 |
| isopyrazam | Whole | 0.01 | 0.7 | 166 | 0 | 0 |
| kresoxim-methyl | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| mandestrobin | Whole | 0.01 | not set | 166 | - | - |
| mefentrifluconazole | Whole | 0.01 | 1 | 166 | 0 | 0 |
| metalaxyl | Whole | 0.01 | 0.2 | 166 | 0 | 0 |
| metrafenone | Whole | 0.01 | not set | 166 | - | - |
| myclobutanil | Whole | 0.01 | 0.5 | 166 | 0 | 0 |

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|---|---|---|---|---|---|---|
| oxadixyl | Whole | 0.01 | not set | 166 | - | - |
| paclobutrazol | Whole | 0.01 | 1 | 166 | 0 | 0 |
| penconazole | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| penthiopyrad | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| prochloraz | Whole | 0.01 | not set | 166 | - | - |
| procymidone | Whole | 0.01 | not set | 166 | - | - |
| propiconazole | Whole | 0.01 | not set | 166 | - | - |
| prothioconazole | Whole | 0.01 | not set | 166 | - | - |
| pyraclostrobin | Whole | 0.01 | 1 | 166 | 0 | 0 |
| pyrimethanil | Whole | 0.01 | 15 | 166 | 1 | 0 |
| tebuconazole | Whole | 0.01 | 0.01 | 166 | 0 | 0 |
| thiabendazole | Whole | 0.01 | 10 | 166 | 0 | 0 |
| tolclofos methyl | Whole | 0.01 | not set | 166 | - | - |
| triadimefon | Whole | 0.01 | not set | 166 | - | - |
| triadimenol | Whole | 0.01 | not set | 166 | - | - |
| trifloxystrobin | Whole | 0.01 | 0.7 | 166 | 0 | 0 |
| triforine | Whole | 0.01 | 1 | 166 | 0 | 0 |
| triticonazole | Whole | 0.01 | not set | 166 | - | - |
| uniconazole-P | Whole | 0.01 | not set | 166 | - | - |
| vinclozolin | Whole | 0.01 | not set | 166 | - | - |

## Table 3: HERBICIDES

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | Number of samples tested | >½MRL to ≤MRL | >MRL |
|---|---|---|---|---|---|---|
| 2,2-DPA (2,2-dichloropropionic acid) | Whole | 0.05 | 0.1 | 166 | 0 | 0 |
| 2,4-D | Whole | 0.01 | 0.05 | 166 | 0 | 0 |
| atrazine | Whole | 0.01 | not set | 166 | - | - |
| bromacil | Whole | 0.01 | not set | 166 | - | - |
| bromoxynil | Whole | 0.01 | not set | 166 | - | - |
| carfentrazone-ethyl | Whole | 0.01 | 0.05 | 166 | 0 | 0 |
| chlorpropham | Whole | 0.05 | not set | 166 | - | - |
| chlorsulfuron | Whole | 0.01 | not set | 166 | - | - |
| chlorthal-dimethyl | Whole | 0.01 | not set | 166 | - | - |
| clethodim | Whole | 0.01 | not set | 166 | - | - |
| clodinafop-propargyl | Whole | 0.01 | not set | 166 | - | - |
| clopyralid | Whole | 0.05 | not set | 166 | - | - |
| cyanazine | Whole | 0.01 | 0.02 | 166 | 0 | 0 |
| dicamba | Whole | 0.01 | not set | 166 | - | - |
| dichlobenil | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| dichlorprop-P | Whole | 0.01 | not set | 166 | - | - |

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|---|---|---|---|---|---|---|
| diflufenican | Whole | 0.01 | not set | 166 | - | - |
| diuron | Whole | 0.01 | not set | 166 | - | - |
| ethofumesate | Whole | 0.01 | not set | 166 | - | - |
| fenoxaprop-ethyl | Whole | 0.01 | not set | 84 | - | - |
| flumioxazin | Whole | 0.02 | 0.02 | 166 | 0 | 0 |
| iodosulfuron-methyl | Whole | 0.01 | not set | 166 | - | - |
| ioxynil | Whole | 0.01 | not set | 166 | - | - |
| isoxaben | Whole | 0.01 | 0.01 | 166 | 0 | 0 |
| linuron | Whole | 0.01 | not set | 166 | - | - |
| MCPA | Whole | 0.01 | not set | 166 | - | - |
| metamitron | Whole | 0.01 | 0.01 | 166 | 0 | 0 |
| methabenzthiazuron | Whole | 0.01 | not set | 166 | - | - |
| metolachlor | Whole | 0.01 | not set | 166 | - | - |
| metosulam | Whole | 0.01 | not set | 166 | - | - |
| metribuzin | Whole | 0.01 | not set | 166 | - | - |
| metsulfuron-methyl | Whole | 0.01 | not set | 166 | - | - |
| napropamide | Whole | 0.01 | not set | 166 | - | - |
| norflurazon | Whole | 0.01 | 0.2 | 166 | 0 | 0 |
| oryzalin | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| oxyfluorfen | Whole | 0.01 | 0.05 | 166 | 0 | 0 |
| pendimethalin | Whole | 0.01 | 0.05 | 166 | 0 | 0 |
| picloram | Whole | 0.01 | not set | 166 | - | - |
| propachlor | Whole | 0.01 | not set | 166 | - | - |
| propyzamide | Whole | 0.01 | not set | 166 | - | - |
| quizalofop-ethyl | Whole | 0.01 | not set | 166 | - | - |
| quizalofop-P-tefuryl | Whole | 0.01 | not set | 166 | - | - |
| saflufenacil | Whole | 0.01 | 0.03 | 166 | 0 | 0 |
| sethoxydim | Whole | 0.01 | not set | 166 | - | - |
| simazine | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| tralkoxydim | Whole | 0.01 | not set | 166 | - | - |
| triasulfuron | Whole | 0.01 | not set | 166 | - | - |
| triclopyr | Whole | 0.01 | not set | 166 | - | - |
| trifluralin | Whole | 0.01 | 0.05 | 166 | 0 | 0 |

## Table 4: INSECTICIDES

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | Number of samples tested | >½MRL to ≤MRL | >MRL |
|---|---|---|---|---|---|---|
| abamectin | Whole | 0.01 | 0.01 | 166 | 0 | 0 |
| acephate | Whole | 0.05 | not set | 166 | - | - |
| acetamiprid | Whole | 0.01 | 0.2 | 166 | 0 | 0 |
| aldicarb | Whole | 0.01 | not set | 166 | - | - |

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|---|---|---|---|---|---|---|
| amitraz | Whole | 0.01 | not set | 166 | - | - |
| azamethiphos | Whole | 0.01 | not set | 166 | - | - |
| azinphos-methyl | Whole | 0.01 | not set | 166 | - | - |
| bifenazate | Whole | 0.01 | 2 | 166 | 0 | 0 |
| bifenthrin | Whole | 0.01 | 0.05 | 166 | 0 | 0 |
| bioresmethrin | Whole | 0.01 | not set | 166 | - | - |
| buprofezin | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| cadusafos | Whole | 0.005 | not set | 166 | - | - |
| carbaryl | Whole | 0.01 | 0.2 | 166 | 0 | 0 |
| carbofuran | Whole | 0.005 | not set | 166 | - | - |
| chlorantraniliprole | Whole | 0.01 | 0.3 | 166 | 0 | 0 |
| chlorfenapyr | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| chlorfenvinphos | Whole | 0.01 | not set | 166 | - | - |
| chlorpyrifos | Whole | 0.005 | 0.5 | 166 | 0 | 0 |
| chlorpyrifos-methyl | Whole | 0.005 | not set | 166 | - | - |
| clofentezine | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| clothianidin | Whole | 0.01 | 2 | 166 | 0 | 0 |
| cyantraniliprole | Whole | 0.01 | 0.05 | 166 | 0 | 0 |
| cyflumetofen | Whole | 0.01 | 0.5 | 76 | 0 | 0 |
| cyfluthrin | Whole | 0.01 | not set | 166 | - | - |
| cyhalothrin | Whole | 0.01 | not set | 166 | - | - |
| cypermethrin | Whole | 0.01 | 1 | 166 | 0 | 0 |
| deltamethrin | Whole | 0.01 | not set | 166 | - | - |
| diazinon | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| dichlorvos | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| dicofol | Whole | 0.01 | 5 | 166 | 0 | 0 |
| diflubenzuron | Whole | 0.01 | not set | 166 | - | - |
| dimethoate | Whole | 0.01 | not set | 166 | - | - |
| disulfoton | Whole | 0.01 | not set | 166 | - | - |
| emamectin | Whole | 0.005 | not set | 166 | - | - |
| ethion | Whole | 0.01 | 1 | 166 | 0 | 0 |
| ethoprophos | Whole | 0.005 | not set | 166 | - | - |
| etoxazole | Whole | 0.01 | 0.2 | 166 | 0 | 0 |
| fenamiphos | Whole | 0.01 | not set | 166 | - | - |
| fenbutatin oxide | Whole | 0.01 | 3 | 166 | 0 | 0 |
| fenitrothion | Whole | 0.01 | 1 | 166 | 0 | 0 |
| fenoxycarb | Whole | 0.01 | 2 | 166 | 0 | 0 |
| fenpyroximate | Whole | 0.01 | 0.3 | 166 | 0 | 0 |
| fenthion | Whole | 0.01 | not set | 166 | - | - |
| fenvalerate | Whole | 0.01 | not set | 166 | - | - |
| fipronil | Whole | 0.005 | not set | 166 | - | - |
| flonicamid | Whole | 0.01 | 0.7 | 166 | 0 | 0 |

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|---|---|---|---|---|---|---|
| flupyradifurone | Whole | 0.01 | 0.2 | 166 | 0 | 0 |
| hexythiazox | Whole | 0.01 | 1 | 166 | 0 | 0 |
| imidacloprid | Whole | 0.01 | 0.3 | 166 | 0 | 0 |
| indoxacarb | Whole | 0.01 | 2 | 166 | 0 | 0 |
| malathion | Whole | 0.01 | 2 | 166 | 0 | 0 |
| metaldehyde | Whole | 0.05 | 1 | 166 | 0 | 0 |
| methacrifos | Whole | 0.01 | not set | 166 | - | - |
| methamidophos | Whole | 0.01 | not set | 166 | - | - |
| methidathion | Whole | 0.01 | not set | 166 | - | - |
| methiocarb | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| methomyl | Whole | 0.01 | 1 | 166 | 0 | 0 |
| methoprene | Whole | 0.01 | not set | 166 | - | - |
| methoxychlor | Whole | 0.01 | not set | 166 | - | - |
| methoxyfenozide | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| mevinphos | Whole | 0.01 | not set | 166 | - | - |
| monocrotophos | Whole | 0.01 | not set | 166 | - | - |
| novaluron | Whole | 0.01 | 0.3 | 166 | 0 | 0 |
| omethoate | Whole | 0.01 | 2 | 166 | 0 | 0 |
| parathion | Whole | 0.01 | not set | 166 | - | - |
| parathion-methyl | Whole | 0.01 | not set | 166 | - | - |
| permethrin | Whole | 0.01 | not set | 166 | - | - |
| phenothrin | Whole | 0.01 | not set | 166 | - | - |
| phorate | Whole | 0.01 | not set | 166 | - | - |
| phosmet | Whole | 0.01 | not set | 166 | - | - |
| piperonyl butoxide | Whole | 0.01 | 8 | 166 | 0 | 0 |
| pirimicarb | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| pirimiphos-methyl | Whole | 0.01 | not set | 166 | - | - |
| profenofos | Whole | 0.01 | not set | 166 | - | - |
| propargite | Whole | 0.01 | 3 | 166 | 1 | 0 |
| prothiofos | Whole | 0.01 | not set | 166 | - | - |
| pymetrozine | Whole | 0.01 | not set | 166 | - | - |
| pyrethrins | Whole | 0.05 | 1 | 166 | 0 | 0 |
| pyridaben | Whole | 0.02 | 0.5 | 166 | 0 | 0 |
| pyriproxyfen | Whole | 0.01 | not set | 166 | - | - |
| spinetoram | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| spinosad | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| spirotetramat | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| sulfoxaflor | Whole | 0.01 | 0.5 | 166 | 0 | 0 |
| tau-fluvalinate | Whole | 0.01 | 0.1 | 166 | 0 | 0 |
| tebufenozide | Whole | 0.01 | 1 | 166 | 0 | 0 |
| tebufenpyrad | Whole | 0.01 | 1 | 166 | 0 | 0 |
| terbufos | Whole | 0.005 | not set | 166 | - | - |

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|---|---|---|---|---|---|---|
| tetradifon | Whole | 0.01 | not set | 166 | - | - |
| tetraniliprole | Whole | 0.01 | 0.5 | 76 | 0 | 0 |
| thiacloprid | Whole | 0.01 | 1 | 166 | 0 | 0 |
| thiamethoxam | Whole | 0.01 | not set | 166 | - | - |
| thiodicarb | Whole | 0.01 | not set | 166 | - | - |
| triazofos | Whole | 0.01 | not set | 166 | - | - |
| trichlorfon | Whole | 0.01 | 0.1 | 166 | 1 | 0 |
| triflumuron | Whole | 0.01 | not set | 166 | - | - |

## Table 5: METALS

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | Number of samples tested | >½MRL to ≤MRL | >MRL |
|---|---|---|---|---|---|---|
| arsenic (total) | Whole | 0.05 | no limit | 109 | 0 | 0 |
| cadmium | Whole | 0.01 | no limit | 109 | 0 | 0 |
| copper | Whole | 0.05 | no limit | 109 | 0 | 0 |
| lead | Whole | 0.01 | 0.1 | 109 | 0 | 0 |
| mercury (total) | Whole | 0.01 | no limit | 109 | 0 | 0 |

## Table 6: MYCOTOXINS

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | Number of samples tested | >½MRL to ≤MRL | >MRL |
|---|---|---|---|---|---|---|
| patulin | Paste | 0.01 | not set | 10 | - | - |

## Table 7: PHYSIOLOGICAL MODIFIER

| Chemical | Matrix | LOR (mg/kg) | MRL (mg/kg) | Number of samples tested | >½MRL to ≤MRL | >MRL |
|---|---|---|---|---|---|---|
| diphenylamine | Whole | 0.01 | 10 | 166 | 1 | 0 |
| forchlorfenuron | Whole | 0.01 | 0.01 | 166 | 0 | 0 |
| prohexadione-calcium | Whole | 0.01 | 0.02 | 166 | 0 | 0 |