



# Almond residue testing annual datasets 2016–17

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.

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**Table 1 Fungicides**

| Chemical       | Matrix | LOR<br>(mg/kg) | MRL<br>(mg/kg) | No. of<br>samples<br>tested | > ½ MRL<br>to ≤ MRL | > MRL |
|----------------|--------|----------------|----------------|-----------------------------|---------------------|-------|
| 2-phenylphenol | Whole  | 0.05           | not set        | 96                          | –                   | 0     |
| azoxystrobin   | Whole  | 0.01           | 0.01           | 96                          | 0                   | 0     |
| benalaxyl      | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| bitertanol     | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| boscalid       | Whole  | 0.01           | 0.5            | 96                          | 0                   | 0     |
| bupirimate     | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| captafol       | Whole  | 0.05           | not set        | 96                          | –                   | 0     |
| captan         | Whole  | 0.05           | 0.3            | 96                          | 0                   | 0     |
| carbendazim    | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| chlorothalonil | Whole  | 0.01           | 0.1            | 96                          | 0                   | 0     |
| cyproconazole  | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| cyprodinil     | Whole  | 0.01           | not set        | 96                          | –                   | 0     |

## Almond residue testing annual datasets 2016–17

| Chemical                                 | Matrix | LOR<br>(mg/kg) | MRL<br>(mg/kg) | No. of<br>samples<br>tested | > ½ MRL<br>to ≤ MRL | > MRL |
|------------------------------------------|--------|----------------|----------------|-----------------------------|---------------------|-------|
| difenoconazole                           | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| dimethomorph (sum of<br>E and Z isomers) | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| dithianon                                | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| dithiocarbamates                         | Whole  | 0.2            | 3              | 96                          | 0                   | 0     |
| dodine                                   | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| epoxiconazole                            | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| etridiazole                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| fenarimol                                | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| fenhexamid                               | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| fluazinam                                | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| fludioxonil                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| fluquinconazole                          | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| flusilazole                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| flutriafol                               | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| hexaconazole                             | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| imazalil                                 | Whole  | 0.01           | Not set        | 96                          | –                   | 0     |
| iprodione                                | Whole  | 0.02           | 0.02           | 96                          | 0                   | 0     |
| kresoxim-methyl                          | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| metalaxyl                                | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| metrafenone                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| myclobutanil                             | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| oxadixyl                                 | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| paclobutrazol                            | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| penconazole                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| penthiopyrad                             | Whole  | 0.01           | 0.1            | 96                          | 0                   | 0     |
| prochloraz                               | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| procymidone                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| propiconazole                            | Whole  | 0.01           | 0.2            | 96                          | 0                   | 0     |
| prothioconazole                          | Whole  | 0.05           | not set        | 96                          | –                   | 0     |
| pyraclostrobin                           | Whole  | 0.01           | 0.01           | 96                          | 0                   | 0     |
| pyrimethanil                             | Whole  | 0.01           | Not set        | 96                          | –                   | 0     |
| tebuconazole                             | Whole  | 0.01           | 0.01           | 96                          | 0                   | 0     |
| thiabendazole                            | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| tolclofos methyl                         | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| triadimefon                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| triadimenol                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| trifloxystrobin                          | Whole  | 0.01           | 0.05           | 96                          | 0                   | 0     |
| triticonazole                            | Whole  | 0.01           | not set        | 96                          | –                   | 0     |
| vinclozolin                              | Whole  | 0.01           | not set        | 96                          | –                   | 0     |

**Table 2 Herbicides**

| Chemical                             | Matrix | LOR<br>(mg/kg) | Australian<br>standard<br>(mg/kg) | No. of<br>samples<br>tested | > ½ MRL<br>to ≤ MRL | > MRL |
|--------------------------------------|--------|----------------|-----------------------------------|-----------------------------|---------------------|-------|
| 2,2-DPA (2,2-dichloropropionic acid) | Whole  | 0.05           | not set                           | 96                          | –                   | 0     |
| 2,4-D                                | Whole  | 0.01           | not set                           | 96                          | –                   | 12    |
| amitrole                             | Whole  | 0.01           | not set                           | 81                          | –                   | 0     |
| atrazine                             | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| bromacil                             | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| bromoxynil                           | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| carfentrazone-ethyl                  | Whole  | 0.01           | 0.05                              | 96                          | 0                   | 0     |
| chlorpropham                         | Whole  | 0.05           | not set                           | 96                          | –                   | 0     |
| chlorsulfuron                        | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| chlorthal-dimethyl                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| clethodim (parent only)              | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| clodinafop-propargyl                 | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| clopyralid                           | Whole  | 0.05           | not set                           | 96                          | –                   | 0     |
| cyanazine                            | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| dicamba                              | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| dichlobenil                          | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| dichlorprop-P                        | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| diclofop-methyl                      | Whole  | 0.01           | not set                           | 81                          | –                   | 0     |
| diflufenican                         | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| diquat                               | Whole  | 0.01           | 0.05                              | 81                          | 0                   | 0     |
| diuron                               | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| ethofumesate                         | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| fenoxaprop-ethyl                     | Whole  | 0.01           | not set                           | 81                          | –                   | 0     |
| flamprop-M-methyl                    | Whole  | 0.01           | not set                           | 81                          | –                   | 0     |
| fluazifop-p-butyl                    | Whole  | 0.01           | not set                           | 81                          | –                   | 0     |
| glufosinate                          | Whole  | 0.01           | 0.1                               | 81                          | 0                   | 0     |
| glyphosate                           | Whole  | 0.01           | 0.2                               | 81                          | 0                   | 0     |
| haloxyfop                            | Whole  | 0.01           | 0.05                              | 81                          | 0                   | 0     |
| iodosulfuron-methyl                  | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| ioxynil                              | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| isoxaben                             | Whole  | 0.01           | 0.01                              | 96                          | 0                   | 0     |
| linuron                              | Whole  | 0.05           | not set                           | 96                          | –                   | 0     |
| MCPA                                 | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| methabenzthiazuron                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| metolachlor                          | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| metosulam                            | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| metribuzin                           | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| metsulfuron-methyl                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |

| Chemical             | Matrix | LOR<br>(mg/kg) | Australian<br>standard<br>(mg/kg) | No. of<br>samples<br>tested | > ½ MRL<br>to ≤ MRL | > MRL |
|----------------------|--------|----------------|-----------------------------------|-----------------------------|---------------------|-------|
| napropamide          | Whole  | 0.01           | 0.1                               | 96                          | 0                   | 0     |
| norflurazon          | Whole  | 0.01           | 0.2                               | 96                          | 0                   | 0     |
| oryzalin             | Whole  | 0.01           | 0.1                               | 96                          | 0                   | 0     |
| oxyfluorfen          | Whole  | 0.01           | 0.05                              | 96                          | 0                   | 0     |
| paraquat             | Whole  | 0.01           | 0.05                              | 81                          | 0                   | 0     |
| pendimethalin        | Whole  | 0.01           | 0.05                              | 96                          | 0                   | 0     |
| picloram             | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| propachlor           | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| propyzamide          | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| quizalofop-ethyl     | Whole  | 0.01           | not set                           | 177                         | –                   | 0     |
| quizalofop-P-tefuryl | Whole  | 0.01           | not set                           | 177                         | –                   | 0     |
| saflufenacil         | Whole  | 0.01           | 0.03                              | 96                          | 0                   | 0     |
| sethoxydim           | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| simazine             | Whole  | 0.01           | 0.1                               | 96                          | 0                   | 0     |
| tralkoxydim          | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| triasulfuron         | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| triclopyr            | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| trifluralin          | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |

**Table 3 Insecticides**

| Chemical                            | Matrix | LOR<br>(mg/kg) | Australian<br>standard<br>(mg/kg) | No. of<br>samples<br>tested | > ½ MRL<br>to ≤ MRL | > MRL |
|-------------------------------------|--------|----------------|-----------------------------------|-----------------------------|---------------------|-------|
| abamectin                           | Whole  | 0.01           | 0.01                              | 96                          | 0                   | 0     |
| acephate                            | Whole  | 0.05           | not set                           | 96                          | –                   | 0     |
| acetamiprid                         | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| aldicarb                            | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| amitraz                             | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| azamethiphos                        | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| azinphos-methyl                     | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| bifenazate                          | Whole  | 0.01           | 0.1                               | 96                          | 0                   | 0     |
| bifenthrin                          | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| bioresmethrin                       | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| buprofezin                          | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| cadusafos                           | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| carbaryl                            | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| carbofuran                          | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| chlorantraniliprole                 | Whole  | 0.01           | 0.05                              | 96                          | 0                   | 0     |
| chlorfenapyr                        | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| chlorfenvinphos (sum<br>of isomers) | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |

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| Chemical                      | Matrix | LOR<br>(mg/kg) | Australian<br>standard<br>(mg/kg) | No. of<br>samples<br>tested | > ½ MRL<br>to ≤ MRL | > MRL |
|-------------------------------|--------|----------------|-----------------------------------|-----------------------------|---------------------|-------|
| chlorpyrifos                  | Whole  | 0.01           | 0.05                              | 96                          | 0                   | 0     |
| chlorpyrifos-methyl           | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| clofentezine                  | Whole  | 0.01           | 0.5                               | 96                          | 0                   | 0     |
| clothianidin                  | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| cyfluthrin (sum of isomers)   | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| cyhalothrin (sum of isomers)  | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| cypermethrin (sum of isomers) | Whole  | 0.01           | 0.01                              | 96                          | 0                   | 0     |
| deltamethrin                  | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| diazinon                      | Whole  | 0.01           | 0.1                               | 96                          | 0                   | 0     |
| dichlorvos                    | Whole  | 0.01           | 2                                 | 96                          | 0                   | 0     |
| dicofol                       | Whole  | 0.01           | 5                                 | 96                          | 0                   | 0     |
| diflubenzuron                 | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| dimethoate                    | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| disulfoton                    | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| emamectin                     | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| esfenvalerate                 | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| ethion                        | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| ethoprophos                   | Whole  | 0.005          | Not set                           | 96                          | –                   | 0     |
| etoxazole                     | Whole  | 0.01           | 0.01                              | 96                          | 0                   | 0     |
| fenamiphos                    | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| fenbutatin oxide              | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| fenitrothion                  | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| fenoxycarb                    | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| fenpyroximate                 | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| fenthion                      | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| fenvalerate (sum of isomers)  | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| fipronil                      | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| flonicamid                    | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| hexythiazox                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| imidacloprid                  | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| indoxacarb                    | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| malathion (maldison)          | Whole  | 0.01           | 8                                 | 96                          | 0                   | 0     |
| metaldehyde                   | Whole  | 0.05           | not set                           | 96                          | –                   | 0     |
| methacrifos                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| methamidophos                 | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| methidathion                  | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| methiocarb                    | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |

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| Chemical                       | Matrix | LOR<br>(mg/kg) | Australian<br>standard<br>(mg/kg) | No. of<br>samples<br>tested | > ½ MRL<br>to ≤ MRL | > MRL |
|--------------------------------|--------|----------------|-----------------------------------|-----------------------------|---------------------|-------|
| methomyl                       | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| methoprene                     | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| methoxychlor                   | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| methoxyfenozide                | Whole  | 0.01           | 0.2                               | 96                          | 0                   | 0     |
| mevinphos                      | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| monocrotophos                  | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| omethoate                      | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| parathion                      | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| parathion-methyl               | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| permethrin (sum of<br>isomers) | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| phenothrin (sum of<br>isomers) | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| phorate                        | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| phosmet                        | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| piperonyl butoxide             | Whole  | 0.01           | 8                                 | 96                          | 0                   | 0     |
| pirimicarb                     | Whole  | 0.01           | 0.05                              | 96                          | 0                   | 0     |
| pirimiphos-methyl              | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| profenofos                     | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| propargite                     | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| prothiofos                     | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| pymetrozine                    | Whole  | 0.01           | 0.01                              | 96                          | 0                   | 0     |
| pyrethrins                     | Whole  | 0.05           | 1                                 | 96                          | 0                   | 0     |
| pyridaben                      | Whole  | 0.02           | 0.05                              | 96                          | 0                   | 0     |
| pyriproxyfen                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| spinetoram                     | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| spinosad                       | Whole  | 0.01           | 0.01                              | 96                          | 0                   | 0     |
| spirotetramat                  | Whole  | 0.01           | Not set                           | 96                          | –                   | 0     |
| sulfoxaflor                    | Whole  | 0.01           | 0.02                              | 96                          | 0                   | 0     |
| tau-fluvalinate                | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| tebufenozide                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| tebufenpyrad                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| terbufos                       | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| tetradifon                     | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| thiacloprid                    | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| thiamethoxam                   | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| thiodicarb                     | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |
| triazofos                      | Whole  | 0.01           | not set                           | 96                          | –                   | 0     |

**Table 4 Contaminants**

| Chemical                        | Matrix | LOR (mg/kg) | Australian standard (mg/kg) | No. of samples tested | > ½ MRL to ≤ MRL | > MRL |
|---------------------------------|--------|-------------|-----------------------------|-----------------------|------------------|-------|
| aldrin and dieldrin (HHDN+HEOD) | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| chlordane                       | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| DDT                             | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| endosulfan                      | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| endrin                          | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| HCB (hexachlorobenzene)         | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| HCH (BHC)                       | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| heptachlor                      | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| lindane (gamma-HCH)             | Whole  | 0.01        | not set                     | 96                    | –                | 0     |
| mirex                           | Whole  | 0.01        | not set                     | 96                    | –                | 0     |

**Table 4 Fumigants**

| Chemical        | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > ½ MRL to ≤ MRL | > MRL |
|-----------------|--------|-------------|-------------|-----------------------|------------------|-------|
| phosphine total | Whole  | 0.005       | 0.01        | 12                    | 0                | 0     |

**Table 5 Physiological Modifier**

| Chemical      | Matrix | LOR (mg/kg) | MRL (mg/kg) | No. of samples tested | > ½ MRL to ≤ MRL | > MRL |
|---------------|--------|-------------|-------------|-----------------------|------------------|-------|
| diphenylamine | Whole  | 0.01        | not set     | 96                    | –                | 0     |