Australian Government

Department of Agriculture, Fisheries and Forestry

Oat 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	0.02	167	0	0
chlordane	Whole	0.01	0.02	167	0	0
DDT	Whole	0.01	0.1	167	0	0
endosulfan	Whole	0.01	not set	167	-	-
endrin	Whole	0.01	not set	167	-	-
HCB (hexachlorobenzene)	Whole	0.01	0.05	167	0	0
HCH (BHC)	Whole	0.01	0.1	167	0	0
heptachlor	Whole	0.01	0.02	167	0	0
lindane (gamma-HCH)	Whole	0.01	0.5	167	0	0
mirex	Whole	0.01	not set	167	-	-

Table 2: FUNGICIDES

Chemical	Matrix	LOR (mg/kg)	MRL (mg/kg)	Number of samples tested	>½MRL to ≤MRL	>MRL
azoxystrobin	Whole	0.01	0.1	167	0	0
benalaxyl	Whole	0.01	not set	167	-	-
benzovindiflupyr	Whole	0.01	0.2	167	0	0
bitertanol	Whole	0.01	not set	167	-	-
bixafen	Whole	0.01	0.01	167	0	0
boscalid	Whole	0.01	0.5	167	0	0
bupirimate	Whole	0.01	not set	167	-	-
captafol	Whole	0.01	not set	167	-	-
captan	Whole	0.01	not set	167	-	-
carbendazim	Whole	0.01	not set	167	-	-
carboxin	Whole	0.01	0.1	167	0	0
carboxin sulfoxide	Whole	0.01	not set	167	-	-
chlorothalonil	Whole	0.01	not set	167	-	-
cyproconazole	Whole	0.01	0.05	167	0	0
cyprodinil	Whole	0.01	not set	167	-	-
difenoconazole	Whole	0.01	0.01	167	0	0
dimethomorph	Whole	0.01	not set	167	-	-
dithianon	Whole	0.01	not set	167	-	-
dodine	Whole	0.01	not set	167	-	-
epoxiconazole	Whole	0.01	0.05	167	0	0
etridiazole	Whole	0.01	not set	167	-	-
fenarimol	Whole	0.01	not set	167	-	-
fenbuconazole	Whole	0.01	not set	167	-	-
fenhexamid	Whole	0.01	not set	167	-	-
florylpicoxamid	Whole	0.01	not set	102	-	-
fluazinam	Whole	0.01	not set	167	-	-
fludioxonil	Whole	0.01	not set	167	-	-
fluopicolide	Whole	0.01	0.01	167	0	0
fluopyram	Whole	0.01	0.03	167	0	0
fluquinconazole	Whole	0.01	not set	167	-	-
flusilazole	Whole	0.01	not set	167	-	-
flutriafol	Whole	0.01	0.1	167	0	0
fluxapyroxad	Whole	0.01	0.2	167	0	0
hexaconazole	Whole	0.01	not set	167	-	-
imazalil	Whole	0.01	not set	167	-	-
ipconazole	Whole	0.01	0.01	167	0	0
iprodione	Whole	0.01	not set	167	-	-
isoprothiolane	Whole	0.01	not set	167	-	-
isopyrazam	Whole	0.01	not set	167	-	-

kresoxim-methyl	Whole	0.01	not set	167	-	-
metalaxyl	Whole	0.01	0.01	167	0	0
myclobutanil	Whole	0.01	not set	167	-	-
oxadixyl	Whole	0.01	not set	167	-	-
penconazole	Whole	0.01	not set	167	-	-
penflufen	Whole	0.01	0.01	167	0	0
prochloraz	Whole	0.01	not set	167	-	-
procymidone	Whole	0.01	not set	167	-	-
propiconazole	Whole	0.01	0.05	167	0	0
prothioconazole	Whole	0.01	0.3	167	0	0
pydiflumetofen	Whole	0.01	0.05	167	0	0
pyraclostrobin	Whole	0.01	0.01	167	0	0
pyrimethanil	Whole	0.01	not set	167	-	-
quinoxyfen	Whole	0.01	not set	167	-	-
quintozene	Whole	0.01	not set	167	-	-
sedaxane	Whole	0.01	0.01	167	0	0
spiroxamine	Whole	0.01	not set	167	-	-
tebuconazole	Whole	0.01	0.2	167	0	0
thiabendazole	Whole	0.01	not set	167	-	-
tolclofos methyl	Whole	0.01	not set	167	-	-
triadimefon	Whole	0.01	0.5	167	0	0
triadimenol	Whole	0.01	0.01	167	0	0
trifloxystrobin	Whole	0.01	not set	167	-	-
triticonazole	Whole	0.01	0.05	167	0	0
uniconazole-P	Whole	0.01	not set	167	-	-
vinclozolin	Whole	0.01	not set	167	-	-

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	0.01	0.1	167	0	0
2,4-D	Whole	0.01	0.2	167	0	0
2,4-DB	Whole	0.01	0.02	167	0	0
acifluorfen	Whole	0.01	not set	167	-	-
aclonifen	Whole	0.01	not set	102	-	-
ametryn	Whole	0.01	not set	167	-	-
aminopyralid	Whole	0.01	0.1	167	0	0
amitrole	Whole	0.01	0.01	74	0	0
atrazine	Whole	0.01	not set	167	-	-
bentazone	Whole	0.01	not set	167	-	-

bicyclopyrone	Whole	0.01	not set	167	-	-
bixlozone	Whole	0.01	not set	167	-	-
bromacil	Whole	0.01	not set	167	-	-
bromoxynil	Whole	0.01	0.2	167	0	0
butafenacil	Whole	0.01	0.02	167	0	0
butroxydim	Whole	0.01	not set	167	-	-
carfentrazone-ethyl	Whole	0.01	0.05	167	0	0
chlormequat	Whole	0.01	not set	74	-	-
chlorpropham	Whole	0.01	not set	167	-	-
chlorsulfuron	Whole	0.01	0.05	167	0	0
chlorthal-dimethyl	Whole	0.01	not set	167	-	-
cinmethylin	Whole	0.01	not set	167	-	-
clethodim	Whole	0.01	not set	167	-	-
clodinafop acid	Whole	0.01	not set	167	-	-
clodinafop-propargyl	Whole	0.01	not set	167	-	-
clomazone	Whole	0.01	not set	167	-	-
clopyralid	Whole	0.01	2	167	0	0
cloquintocet-mexyl	Whole	0.01	0.1	167	0	0
cyanazine	Whole	0.01	0.01	167	0	0
dicamba	Whole	0.01	0.05	167	0	0
dichlobenil	Whole	0.01	not set	167	-	-
dichlorprop-P	Whole	0.01	not set	74	-	-
diclofop-methyl	Whole	0.01	0.1	74	0	0
diflufenican	Whole	0.01	0.05	167	0	0
dimethenamid-P	Whole	0.01	not set	167	-	-
diquat	Whole	0.01	5	74	0	0
diuron	Whole	0.01	0.1	167	0	0
EPTC	Whole	0.01	0.04	167	0	0
ethofumesate	Whole	0.01	not set	167	-	-
fenoxaprop-ethyl	Whole	0.01	not set	167	-	-
flamprop-M-methyl	Whole	0.01	not set	74	-	-
florasulam	Whole	0.01	0.01	167	0	0
florpyrauxifen-benzyl	Whole		not set	167	-	-
fluazifop-p-butyl	Whole	0.01	not set	74	-	-
flumetsulam	Whole	0.01	0.05	167	0	0
flumioxazin	Whole	0.01	0.05	167	0	0
fluroxypyr	Whole	0.01	0.2	167	0	0
fomesafen	Whole	0.01	not set	167	-	-
glufosinate	Whole	0.01	0.1	74	0	0
glyphosate	Whole	0.01	0.1	74	4	2
halauxifen-methyl	Whole	0.01	0.01	167	0	0
halosulfuron-methyl	Whole	0.01	not set	167	-	-

haloxyfop	Whole	0.005	not set	74	-	-
imazamox	Whole	0.01	not set	18	-	-
imazapic	Whole	0.01	0.05	18	0	0
imazapyr	Whole	0.01	0.1	18	0	0
imazaquin	Whole	0.01	not set	18	-	-
imazethapyr	Whole	0.01	not set	18	-	-
iodosulfuron-methyl	Whole	0.01	not set	167	-	-
ioxynil	Whole	0.01	not set	167	-	-
isoxaben	Whole	0.01	not set	167	-	-
isoxaflutole	Whole	0.01	0.02	167	0	0
linuron	Whole	0.01	0.05	167	0	0
MCPA	Whole	0.01	0.02	167	0	0
MCPB	Whole	0.01	0.02	167	0	0
mefenpyr-diethyl	Whole	0.01	0.01	167	0	0
mesotrione	Whole	0.01	0.01	167	0	0
metamitron	Whole	0.01	not set	167	-	-
metazachlor	Whole	0.01	0.03	167	0	0
methabenzthiazuron	Whole	0.01	not set	167	-	-
metolachlor	Whole	0.01	0.02	167	0	0
metosulam	Whole	0.01	0.02	167	0	0
metribuzin	Whole	0.01	0.05	167	0	0
metsulfuron-methyl	Whole	0.01	0.02	167	0	0
napropamide	Whole	0.01	not set	167	-	-
norflurazon	Whole	0.01	not set	167	-	-
oryzalin	Whole	0.01	0.01	167	0	0
oxyfluorfen	Whole	0.01	0.05	167	0	0
paraquat	Whole	0.01	0.05	74	0	0
pendimethalin	Whole	0.01	0.05	167	0	0
picloram	Whole	0.01	0.2	167	0	0
picolinafen	Whole	0.01	0.02	167	0	0
pinoxaden (parent)	Whole	0.01	not set	167	-	-
prometryn	Whole	0.01	0.1	167	0	0
propachlor	Whole	0.01	0.05	167	0	0
propaquizafop	Whole	0.01	not set	74	-	-
propyzamide	Whole	0.01	not set	167	-	-
prosulfocarb	Whole	0.01	0.01	167	0	0
pyraflufen-ethyl	Whole	0.01	0.02	167	0	0
pyrasulfotole	Whole	0.01	0.02	167	0	0
pyroxasulfone	Whole	0.01	0.01	167	0	0
pyroxsulam	Whole	0.01	not set	167	-	-
quizalofop-ethyl	Whole	0.01	not set	74	-	-
quizalofop-P-tefuryl	Whole	0.01	not set	74	-	-

saflufenacil	Whole	0.01	0.2	167	0	0
sethoxydim	Whole	0.01	not set	167	-	-
simazine	Whole	0.01	not set	167	-	-
sulfosulfuron	Whole	0.01	not set	167	-	-
terbuthylazine	Whole	0.01	0.01	167	0	0
terbutryn	Whole	0.01	0.1	167	0	0
tiafenacil	Whole	0.01	0.01	167	0	0
topramezone	Whole	0.01	not set	167	-	-
tralkoxydim	Whole	0.01	0.02	167	0	0
triallate	Whole	0.01	0.05	167	0	0
triasulfuron	Whole	0.01	0.02	167	0	0
tribenuron-methyl	Whole	0.01	0.01	167	0	0
triclopyr	Whole	0.01	not set	167	-	-
trifludimoxazin	Whole	0.01	0.01	167	0	0
trifluralin	Whole	0.01	0.05	167	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	not set	167	-	-
acephate	Whole	0.01	not set	167	-	-
acetamiprid	Whole	0.01	not set	167	-	-
aldicarb	Whole	0.01	not set	167	-	-
amitraz	Whole	0.01	not set	167	-	-
azamethiphos	Whole	0.01	0.1	167	0	0
azinphos-methyl	Whole	0.01	not set	167	-	-
bifenazate	Whole	0.01	not set	167	-	-
bifenthrin	Whole	0.01	0.02	167	0	0
bioresmethrin	Whole	0.01	not set	167	-	-
buprofezin	Whole	0.01	0.01	167	0	0
cadusafos	Whole	0.01	not set	167	-	-
carbaryl	Whole	0.01	5	167	0	0
carbofuran	Whole	0.01	not set	167	-	-
chlorantraniliprole	Whole	0.01	0.1	167	0	0
chlorfenapyr	Whole	0.01	not set	167	-	-
chlorfenvinphos	Whole	0.01	not set	167	-	-
chlorpyrifos	Whole	0.01	0.1	167	0	0
chlorpyrifos-methyl	Whole	0.01	10	167	0	0
clofentezine	Whole	0.01	not set	167	-	-
clothianidin	Whole	0.01	0.02	167	0	0
cyantraniliprole	Whole	0.01	0.05	167	0	0

cyfluthrin	Whole	0.01	not set	167	-	-
cyhalothrin	Whole	0.01	0.01	167	0	0
cypermethrin	Whole	0.01	1	167	0	0
deltamethrin	Whole	0.01	2	167	0	0
diafenthiuron	Whole	0.01	not set	167	-	-
diazinon	Whole	0.01	0.1	167	0	0
dichlorvos	Whole	0.01	0.01	167	0	0
dicofol	Whole	0.01	not set	167	-	-
diflubenzuron	Whole	0.01	not set	167	-	-
dimethoate	Whole	0.01	0.5	167	0	0
dinotefuran	Whole	0.01	not set	167	-	-
disulfoton	Whole	0.01	not set	167	-	-
emamectin	Whole	0.01	not set	167	-	-
ethion	Whole	0.01	not set	167	-	-
ethoprophos	Whole	0.005	not set	167	-	-
etoxazole	Whole	0.01	not set	167	-	-
fenamiphos	Whole	0.01	not set	167	-	-
fenbutatin oxide	Whole	0.01	not set	167	-	-
fenitrothion	Whole	0.01	10	167	0	0
fenoxycarb	Whole	0.01	not set	167	-	-
fenpyroximate	Whole	0.01	not set	167	-	-
fenthion	Whole	0.01	not set	167	-	-
fenvalerate	Whole	0.01	2	167	0	0
fipronil	Whole	0.002	not set	167	-	-
flonicamid	Whole	0.01	not set	167	-	-
fluensulfone	Whole	0.01	0.05	167	0	0
flupyradifurone	Whole	0.01	0.2	167	0	0
hexythiazox	Whole	0.01	not set	167	-	-
imidacloprid	Whole	0.01	0.05	167	0	0
indoxacarb	Whole	0.01	not set	167	-	-
malathion	Whole	0.01	8	167	0	0
methacrifos	Whole	0.01	not set	167	-	-
methamidophos	Whole	0.01	not set	167	-	-
methidathion	Whole	0.01	not set	167	-	-
methiocarb	Whole	0.01	not set	167	-	-
methomyl	Whole	0.01	0.1	167	0	0
methoprene	Whole	0.01	2	167	0	0
methoxychlor	Whole	0.01	not set	167	-	-
methoxyfenozide	Whole	0.01	not set	167	-	-
mevinphos	Whole	0.01	not set	167	-	-
monocrotophos	Whole	0.01	not set	167	-	-
omethoate	Whole	0.01	0.05	167	0	0

parathion	Whole	0.01	not set	167	-	-
parathion-methyl	Whole	0.01	not set	167	-	-
permethrin	Whole	0.01	2	167	0	0
phenothrin	Whole	0.01	not set	167	-	-
phorate	Whole	0.01	not set	167	-	-
phosmet	Whole	0.01	0.05	167	0	0
piperonyl butoxide	Whole	0.01	20	167	0	0
pirimicarb	Whole	0.01	0.02	167	0	0
pirimiphos-methyl	Whole	0.01	7	167	0	0
profenofos	Whole	0.01	not set	167	-	-
propargite	Whole	0.01	not set	167	-	-
prothiofos	Whole	0.01	not set	167	-	-
pymetrozine	Whole	0.01	not set	167	-	-
pyrethrins	Whole	0.01	3	167	0	0
pyriproxyfen	Whole	0.01	not set	167	-	-
spinetoram	Whole	0.01	not set	167	-	-
spinosad	Whole	0.01	1	167	0	0
spirotetramat	Whole	0.01	not set	167	-	-
sulfoxaflor	Whole	0.01	0.01	167	0	0
tau-fluvalinate	Whole	0.01	not set	167	-	-
tebufenozide	Whole	0.01	not set	167	-	-
tebufenpyrad	Whole	0.01	not set	167	-	-
terbufos	Whole	0.01	0.01	167	0	0
tetradifon	Whole	0.01	not set	167	-	-
tetraniliprole	Whole	0.01	not set	102	-	-
thiacloprid	Whole	0.01	not set	167	-	-
thiamethoxam	Whole	0.01	0.01	167	0	0
thiodicarb	Whole	0.01	not set	167	-	-
triazofos	Whole	0.01	not set	167	-	-
trichlorfon	Whole	0.01	0.1	167	0	0
triflumuron	Whole	0.01	0.05	167	0	0

Table 5: PHYSIOLOGICAL MODIFIER

Chemical	Matrix	LOR (mg/kg)	MRL (mg/kg)	Number of samples tested	>½MRL to ≤MRL	>MRL
forchlorfenuron	Whole	0.01	not set	167	-	-
prohexadione-calcium	Whole	0.01	not set	167	-	-
trinexapac-ethyl	Whole	0.01	0.2	167	0	0

About the data

Purpose:
The National Residue Survey (NRS) is a vital part of the Australian system for managing the risk of chemical residues and environmental contaminants in Australian animal and plant products. The NRS supports Australia's primary producers and agricultural industries by confirming Australia's status as a producer of clean food and facilitating access to domestic and export markets.

The National Residue Survey annual dataset report is a detailed report of residue testing results that is published to the department's website on an annual basis for public and industry consumption.

Intended audience:
The intended audience for this report is the National Residue Survey (NRS) section within the Residue and Food Branch.
This report supports the business area to deliver residue datasets to industry which details residue results.

Key information:
Number of samples tested:

- This value is the count of distinct samples taken. It includes only those physical samples which have been collected within the financial year. This includes samples which are 'overflow' samples: i.e. the samples exceed the plan target.
  - Note: although samples are taken within the financial year, some lab results may be reported later. This means that the **National Residue Survey annual summary** report cannot be finalised until all relevant lab results have been received.
- The number of samples tested includes samples which have complete analyses and are marked as complete in the NRS Integrated Management System (IMS). If a sample has had analysis completed but is later cancelled, it is not included in the sample count.
- In rare cases, samples are taken (collected) on an 'invalid date' which falls outside of the financial year for which the relevant sampling plan is active. For example, a scheduled sample is collected under a 2020-21 sampling plan, but it was recorded to be taken before the start of the 2020-21 financial year. These samples are considered invalid and are excluded from the count given by Number of samples tested.

Samples > MRL:

- Whether a sample is in contravention to an MRL is calculated relative to the Australian Maximum Residue Limits (MRL) that was active at the time the sample was taken (collected), according to records stored in the IMS source system.
  - The data model that underlies this report cleanses and corrects data quality issues with MRLs which are stored in the IMS source system. More information on this process including limitations and risks, can be found at the model documentation.
- Where there is no record found in the IMS source system for a particular MRL, but an MRL is expected, the absence is highlighted in **red** in the report. This allows for easy identification. The NRS business area should rectify missing records by adding a MRL into the IMS.

Samples > LOR:

- Whether a sample has returned a residue concentration result that is above the Limit of Reporting (LOR) is calculated relative to the relative LOR that was active at the time that the laboratory returned the sample results report, according to records stored in the IMS source system.
  - There is specific logic for choosing the relevant LOR to compare the result to for cases where the test method used by a laboratory tests for the presence of an analyte in its metabolite

and/or parent compound form. See details at the model documentation.

Sample programs, sampling plans and analysis programs:

- The report presents a *default* selection of sample programs, sampling plans and analysis programs based on the following rules:
  - Include all non-pilot programs,
  - Include the following pilot sample programs: PILOT BEEF – DIOXINS, PILOT OVINE – DIOXINS, PILOT GOAT – DIOXINS
  - Excludes the following sample plans: Apple juice – patulin testing, Faba Bean Indonesia, Indonesia – Faba Bean
- Should this default selection no longer apply the user is able to custom-select their required parameters.

Limitations:

This report does not provide the ability to exclude samples that were collected and analysed under pilot programs established for individual products and analysis programs within a sampling plan. This approach to pilot program management affects the NRS Plant program only, and is not typically used in the NRS Animal program. As a result of this, NRS Plant program officers are required to manually analyse and revise the values for Samples collected that are presented in this report to remove pilot samples where appropriate.

Key definitions:

Show empty analyte group: This parameter allows the user to 'show/hide' Table 0 in the report. Table 0 shows compounds (analytes) which have not been assigned a [Reporting analyte group] in the reference datasets which is maintained by the National Residue Survey business area. If analytes appear in Table 0, the reference data list should be updated to include the analyte and assign it a reporting group.

Select brochure: This parameter lists brochure names for reportable products as they are recorded in the reference data which is maintained by the National Residue Survey business area. Specifically, it is a comprehensive list of brochures that are reportable in the given FY. To add new products to an existing brochure name, or to add a new brochure altogether, the reference data list should be updated.
Financial year: This filters data based on the date which samples were taken (collected).

Data source(s):

The data source for this report is the Biosecurity Analytics Centre's curated *National residue survey* model. The source system is the National Residue Survey Integrated Management System (IMS). The *National residue survey* model also contains reference data that is provided and maintained by the National Residue Survey business area.

Detailed information about the logic and curation used in the Biosecurity Analytics Centre's *National residue survey* model can be found at the model documentation site.

Biosecurity Analytics Centre

This report was produced by the Biosecurity Analytics Centre in accordance with the National Residue Survey Administration Act 1992.

The National Residue Survey Administration Act 1992 contains conditions on the release and use of information (refer to Section 11, release of information). Breaches of these conditions may result in an offence under the Act.

Contact: Biosecurity Analytics Centre