Australian Government

Department of Agriculture, Fisheries and Forestry

Chickpea 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	not set	260	-	-
chlordane	Whole	0.01	0.02	260	0	0
DDT	Whole	0.01	1	260	0	0
endosulfan	Whole	0.01	not set	260	-	-
endrin	Whole	0.01	not set	260	-	-
HCB (hexachlorobenzene)	Whole	0.01	not set	260	-	-
HCH (BHC)	Whole	0.01	not set	260	-	-
heptachlor	Whole	0.01	0.05	260	0	0
lindane (gamma-HCH)	Whole	0.01	2	260	0	0
mirex	Whole	0.01	not set	260	-	-

Table 2: FUNGICIDES

Chemical	Matrix	LOR (mg/kg)	MRL (mg/kg)	Number of samples tested	>½MRL to ≤MRL	>MRL
azoxystrobin	Whole	0.01	0.3	260	0	0
benalaxyl	Whole	0.01	not set	260	-	-
benzovindiflupyr	Whole	0.01	not set	260	-	-
bitertanol	Whole	0.01	not set	260	-	-
bixafen	Whole	0.01	0.01	260	0	0
boscalid	Whole	0.01	3	260	0	0
bupirimate	Whole	0.01	not set	260	-	-
captafol	Whole	0.01	not set	260	-	-
captan	Whole	0.01	0.1	260	0	0
carbendazim	Whole	0.01	0.5	260	0	0
carboxin	Whole	0.01	not set	260	-	-
carboxin sulfoxide	Whole	0.01	not set	260	-	-
chlorothalonil	Whole	0.01	3	260	0	0
cyproconazole	Whole	0.01	0.05	260	0	0
cyprodinil	Whole	0.01	0.2	260	0	0
difenoconazole	Whole	0.01	not set	260	-	-
dimethomorph	Whole	0.01	1	260	0	0
dithianon	Whole	0.01	not set	260	-	-
dodine	Whole	0.01	not set	260	-	-
epoxiconazole	Whole	0.01	not set	260	-	-
etridiazole	Whole	0.01	0.2	260	0	0
fenarimol	Whole	0.01	not set	260	-	-
fenbuconazole	Whole	0.01	not set	260	-	-
fenhexamid	Whole	0.01	not set	260	-	-
florylpicoxamid	Whole	0.01	not set	158	-	-
fluazinam	Whole	0.01	not set	260	-	-
fludioxonil	Whole	0.01	0.1	260	0	0
fluopicolide	Whole	0.01	0.01	260	0	0
fluopyram	Whole	0.01	0.03	260	0	0
fluquinconazole	Whole	0.01	not set	260	-	-
flusilazole	Whole	0.01	not set	260	-	-
flutriafol	Whole	0.01	0.05	260	0	0
fluxapyroxad	Whole	0.01	0.1	260	0	0
hexaconazole	Whole	0.01	not set	260	-	-
imazalil	Whole	0.01	not set	260	-	-
ipconazole	Whole	0.01	not set	260	-	-
iprodione	Whole	0.01	not set	260	-	-
isoprothiolane	Whole	0.01	not set	260	-	-
isopyrazam	Whole	0.01	not set	260	-	-

kresoxim-methyl	Whole	0.01	not set	260	-	-
metalaxyl	Whole	0.01	not set	260	-	-
myclobutanil	Whole	0.01	not set	260	-	-
oxadixyl	Whole	0.01	not set	260	-	-
penconazole	Whole	0.01	not set	260	-	-
penflufen	Whole	0.01	0.01	260	0	0
prochloraz	Whole	0.01	not set	260	-	-
procymidone	Whole	0.01	0.5	260	0	0
propiconazole	Whole	0.01	0.3	260	0	0
prothioconazole	Whole	0.01	0.02	260	0	0
pydiflumetofen	Whole	0.01	0.4	260	0	0
pyraclostrobin	Whole	0.01	not set	260	-	-
pyrimethanil	Whole	0.01	not set	260	-	-
quinoxyfen	Whole	0.01	not set	260	-	-
quintozene	Whole	0.01	not set	260	-	-
sedaxane	Whole	0.01	not set	260	-	-
spiroxamine	Whole	0.01	not set	260	-	-
tebuconazole	Whole	0.01	1	260	0	0
thiabendazole	Whole	0.01	not set	260	-	-
tolclofos methyl	Whole	0.01	not set	260	-	-
triadimefon	Whole	0.01	not set	260	-	-
triadimenol	Whole	0.01	not set	260	-	-
trifloxystrobin	Whole	0.01	not set	260	-	-
triticonazole	Whole	0.01	not set	260	-	-
uniconazole-P	Whole	0.01	not set	260	-	-
vinclozolin	Whole	0.01	not set	260	-	-

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	not set	260	-	-
2,4-D	Whole	0.01	0.05	260	0	0
2,4-DB	Whole	0.01	not set	260	-	-
acifluorfen	Whole	0.01	0.1	260	0	0
aclonifen	Whole	0.01	not set	158	-	-
ametryn	Whole	0.01	not set	260	-	-
aminopyralid	Whole	0.01	not set	260	-	-
amitrole	Whole	0.01	0.01	48	0	0
atrazine	Whole	0.01	not set	260	-	-
bentazone	Whole	0.01	0.01	260	0	0

bicyclopyrone	Whole	0.01	not set	260	-	-
bixlozone	Whole	0.01	not set	260	-	-
bromacil	Whole	0.01	not set	260	-	-
bromoxynil	Whole	0.01	not set	260	-	-
butafenacil	Whole	0.01	0.01	260	0	0
butroxydim	Whole	0.01	0.01	260	0	0
carfentrazone-ethyl	Whole	0.01	not set	260	-	-
chlormequat	Whole	0.01	not set	48	-	-
chlorpropham	Whole	0.01	not set	260	-	-
chlorsulfuron	Whole	0.01	not set	260	-	-
chlorthal-dimethyl	Whole	0.01	not set	260	-	-
cinmethylin	Whole	0.01	not set	260	-	-
clethodim	Whole	0.01	0.1	260	0	0
clodinafop acid	Whole	0.01	not set	260	-	-
clodinafop-propargyl	Whole	0.01	not set	260	-	-
clomazone	Whole	0.01	not set	260	-	-
clopyralid	Whole	0.01	not set	260	-	-
cloquintocet-mexyl	Whole	0.01	not set	260	-	-
cyanazine	Whole	0.01	0.01	260	0	0
dicamba	Whole	0.01	not set	260	-	-
dichlobenil	Whole	0.01	not set	260	-	-
dichlorprop-P	Whole	0.01	not set	48	-	-
diclofop-methyl	Whole	0.01	not set	48	-	-
diflufenican	Whole	0.01	0.05	260	0	0
dimethenamid-P	Whole	0.01	0.02	260	0	0
diquat	Whole	0.01	1	48	0	0
diuron	Whole	0.01	0.05	260	0	0
EPTC	Whole	0.01	0.04	260	0	0
ethofumesate	Whole	0.01	not set	260	-	-
fenoxaprop-ethyl	Whole	0.01	0.01	260	0	0
flamprop-M-methyl	Whole	0.01	0.01	48	0	0
florasulam	Whole	0.01	not set	260	-	-
florpyrauxifen-benzyl	Whole		not set	260	-	-
fluazifop-p-butyl	Whole	0.01	0.5	48	0	0
flumetsulam	Whole	0.01	0.05	260	0	0
flumioxazin	Whole	0.01	0.1	260	0	0
fluroxypyr	Whole	0.01	not set	260	-	-
fomesafen	Whole	0.01	0.01	260	0	0
glufosinate	Whole	0.01	not set	48	-	-
glyphosate	Whole	0.01	5	48	0	1
halauxifen-methyl	Whole	0.01	not set	260	-	-
halosulfuron-methyl	Whole	0.01	not set	260	-	-

haloxyfop	Whole	0.005	0.1	48	3	0
imazamox	Whole	0.01	not set	8	-	-
imazapic	Whole	0.01	not set	8	-	-
imazapyr	Whole	0.01		8	0	0
imazaquin	Whole	0.01	not set	8	-	-
imazethapyr	Whole	0.01	0.1	8	0	0
iodosulfuron-methyl	Whole	0.01	not set	260	-	-
ioxynil	Whole	0.01	not set	260	-	-
isoxaben	Whole	0.01	not set	260	-	-
isoxaflutole	Whole	0.01	0.02	260	0	0
linuron	Whole	0.01	not set	260	-	-
MCPA	Whole	0.01	not set	260	-	-
MCPB	Whole	0.01	0.02	260	0	0
mefenpyr-diethyl	Whole	0.01	not set	260	-	-
mesotrione	Whole	0.01	not set	260	-	-
metamitron	Whole	0.01	not set	260	-	-
metazachlor	Whole	0.01	0.03	260	0	0
methabenzthiazuron	Whole	0.01	not set	260	-	-
metolachlor	Whole	0.01	0.01	260	0	0
metosulam	Whole	0.01	not set	260	-	-
metribuzin	Whole	0.01	0.01	260	0	0
metsulfuron-methyl	Whole	0.01	0.05	260	0	0
napropamide	Whole	0.01	not set	260	-	-
norflurazon	Whole	0.01	not set	260	-	-
oryzalin	Whole	0.01	not set	260	-	-
oxyfluorfen	Whole	0.01	not set	260	-	-
paraquat	Whole	0.01	1	48	0	0
pendimethalin	Whole	0.01	0.05	260	0	0
picloram	Whole	0.01	not set	260	-	-
picolinafen	Whole	0.01	not set	260	-	-
pinoxaden (parent)	Whole	0.01	not set	260	-	-
prometryn	Whole	0.01	0.1	260	0	0
propachlor	Whole	0.01	not set	260	-	-
propaquizafop	Whole	0.01	0.05	48	0	0
propyzamide	Whole	0.01	0.01	260	0	0
prosulfocarb	Whole	0.01	0.01	260	0	0
pyraflufen-ethyl	Whole	0.01	0.02	260	0	0
pyrasulfotole	Whole	0.01	not set	260	-	-
pyroxasulfone	Whole	0.01	0.01	260	0	0
pyroxsulam	Whole	0.01	not set	260	-	-
quizalofop-ethyl	Whole	0.01	0.2	48	0	0
quizalofop-P-tefuryl	Whole	0.01	0.2	48	0	0

saflufenacil	Whole	0.01	0.2	260	0	0
sethoxydim	Whole	0.01	0.1	260	0	0
simazine	Whole	0.01	0.05	260	0	0
sulfosulfuron	Whole	0.01	not set	260	-	-
terbuthylazine	Whole	0.01	0.02	260	0	0
terbutryn	Whole	0.01	not set	260	-	-
tiafenacil	Whole	0.01	0.01	260	0	0
topramezone	Whole	0.01	not set	260	-	-
tralkoxydim	Whole	0.01	not set	260	-	-
triallate	Whole	0.01	0.1	260	0	0
triasulfuron	Whole	0.01	not set	260	-	-
tribenuron-methyl	Whole	0.01	0.01	260	0	0
triclopyr	Whole	0.01	not set	260	-	-
trifludimoxazin	Whole	0.01	0.01	260	0	0
trifluralin	Whole	0.01	0.05	260	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	260	-	-
acephate	Whole	0.01	not set	260	-	-
acetamiprid	Whole	0.01	0.1	260	0	0
aldicarb	Whole	0.01	not set	260	-	-
amitraz	Whole	0.01	not set	260	-	-
azamethiphos	Whole	0.01	not set	260	-	-
azinphos-methyl	Whole	0.01	not set	260	-	-
bifenazate	Whole	0.01	0.5	260	0	0
bifenthrin	Whole	0.01	0.02	260	0	0
bioresmethrin	Whole	0.01	not set	260	-	-
buprofezin	Whole	0.01	0.01	260	0	0
cadusafos	Whole	0.01	not set	260	-	-
carbaryl	Whole	0.01	0.1	260	0	0
carbofuran	Whole	0.01	not set	260	-	-
chlorantraniliprole	Whole	0.01	0.07	260	0	0
chlorfenapyr	Whole	0.01	not set	260	-	-
chlorfenvinphos	Whole	0.01	not set	260	-	-
chlorpyrifos	Whole	0.01	not set	260	-	-
chlorpyrifos-methyl	Whole	0.01	0.15	260	0	0
clofentezine	Whole	0.01	not set	260	-	-
clothianidin	Whole	0.01	0.02	260	0	0
cyantraniliprole	Whole	0.01	0.05	260	0	0

cyfluthrin	Whole	0.01	not set	260	-	-
cyhalothrin	Whole	0.01	0.2	260	0	0
cypermethrin	Whole	0.01	0.2	260	0	0
deltamethrin	Whole	0.01	0.1	260	0	0
diafenthiuron	Whole	0.01	not set	260	-	-
diazinon	Whole	0.01	0.7	260	0	0
dichlorvos	Whole	0.01	0.01	260	0	0
dicofol	Whole	0.01	not set	260	-	-
diflubenzuron	Whole	0.01	not set	260	-	-
dimethoate	Whole	0.01	0.7	260	0	0
dinotefuran	Whole	0.01	not set	260	-	-
disulfoton	Whole	0.01	not set	260	-	-
emamectin	Whole	0.01	0.01	260	0	0
ethion	Whole	0.01	not set	260	-	-
ethoprophos	Whole	0.005	not set	260	-	-
etoxazole	Whole	0.01	not set	260	-	-
fenamiphos	Whole	0.01	not set	260	-	-
fenbutatin oxide	Whole	0.01	not set	260	-	-
fenitrothion	Whole	0.01	0.1	260	3	1
fenoxycarb	Whole	0.01	not set	260	-	-
fenpyroximate	Whole	0.01	not set	260	-	-
fenthion	Whole	0.01	not set	260	-	-
fenvalerate	Whole	0.01	0.5	260	0	0
fipronil	Whole	0.002	not set	260	-	-
flonicamid	Whole	0.01	not set	260	-	-
fluensulfone	Whole	0.01	0.05	260	0	0
flupyradifurone	Whole	0.01	0.2	260	0	0
hexythiazox	Whole	0.01	not set	260	-	-
imidacloprid	Whole	0.01	not set	260	-	-
indoxacarb	Whole	0.01	0.2	260	0	0
malathion	Whole	0.01	2	260	0	0
methacrifos	Whole	0.01	not set	260	-	-
methamidophos	Whole	0.01	not set	260	-	-
methidathion	Whole	0.01	not set	260	-	-
methiocarb	Whole	0.01	not set	260	-	-
methomyl	Whole	0.01	1	260	0	0
methoprene	Whole	0.01	not set	260	-	-
methoxychlor	Whole	0.01	not set	260	-	-
methoxyfenozide	Whole	0.01	2	260	0	0
mevinphos	Whole	0.01	not set	260	-	-
monocrotophos	Whole	0.01	not set	260	-	-
omethoate	Whole	0.01	0.1	260	0	0

parathion	Whole	0.01	not set	260	-	-
parathion-methyl	Whole	0.01	not set	260	-	-
permethrin	Whole	0.01	not set	260	-	-
phenothrin	Whole	0.01	not set	260	-	-
phorate	Whole	0.01	not set	260	-	-
phosmet	Whole	0.01	not set	260	-	-
piperonyl butoxide	Whole	0.01	8	260	0	0
pirimicarb	Whole	0.01	0.02	260	0	0
pirimiphos-methyl	Whole	0.01	not set	260	-	-
profenofos	Whole	0.01	not set	260	-	-
propargite	Whole	0.01	not set	260	-	-
prothiofos	Whole	0.01	not set	260	-	-
pymetrozine	Whole	0.01	not set	260	-	-
pyrethrins	Whole	0.01	1	260	0	0
pyriproxyfen	Whole	0.01	not set	260	-	-
spinetoram	Whole	0.01	0.01	260	0	0
spinosad	Whole	0.01	0.01	260	0	0
spirotetramat	Whole	0.01	not set	260	-	-
sulfoxaflor	Whole	0.01	not set	260	-	-
tau-fluvalinate	Whole	0.01	not set	260	-	-
tebufenozide	Whole	0.01	not set	260	-	-
tebufenpyrad	Whole	0.01	not set	260	-	-
terbufos	Whole	0.01	not set	260	-	-
tetradifon	Whole	0.01	not set	260	-	-
tetraniliprole	Whole	0.01	not set	158	-	-
thiacloprid	Whole	0.01	not set	260	-	-
thiamethoxam	Whole	0.01	0.02	260	0	1
thiodicarb	Whole	0.01	0.1	260	0	0
triazofos	Whole	0.01	not set	260	-	-
trichlorfon	Whole	0.01	0.2	260	0	0
triflumuron	Whole	0.01	not set	260	-	-

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	260	-	-
prohexadione-calcium	Whole	0.01	not set	260	-	-
trinexapac-ethyl	Whole	0.01	not set	260	-	-

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