



# National Residue Survey 2022–23

## Cattle



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The National Residue Survey (NRS) operates within the Australian Government Department of Agriculture, Fisheries and Forestry, and since 1992 has been funded by industries through levies and direct contracts.

The NRS is an essential part of Australia's pesticide and veterinary medicine residue management framework providing verification of good agricultural practice in support of chemical control-of-use legislation and guidelines.

NRS programs monitor the levels of, and associated risks from, pesticides and veterinary medicine residues and contaminants in Australian food products. The programs help to facilitate and encourage ongoing access to domestic and export markets. The NRS supports Australia's primary producers and food processors who provide quality animal, grain and horticulture products which meet both Australian and relevant international standards.

### Cattle program overview

The cattle program has been operating since the early 1960s and is funded through the NRS component of the cattle transaction levy. The program involves the testing of Australian cattle tissue samples for a range of pesticides, veterinary medicines, and environmental contaminants.

The program ensures beef exports satisfy Australian export certification and importing country requirements. In addition, the program supports industry quality assurance initiatives and enables domestic meat processing facilities to satisfy state and territory government regulatory authority licensing requirements.

### Sample collection

The number of samples collected is based on Australian production levels and/or overseas export market requirements.

Samples are collected by authorised government officers at export abattoirs and by quality control officers at domestic establishments from randomly selected carcasses along the processing chain, in accordance with NRS requirements.

### Key points

- In 2022-23, the overall compliance with Australian standards was 99.98% for cattle samples.
- Australian cattle producers continue to demonstrate a high degree of good agricultural practice.
- The National Residue Survey's quality management system (QMS) is certified to ISO standard 9001:2015.

## Analytical screens

Analytical screens are developed in consultation with the industry and take into account chemicals registered in Australia, chemical residue profiles and overseas market requirements.

Cattle samples are screened for a range of pesticides, veterinary medicines and environmental contaminants, as shown in Table 1.

**Table 1. Analytical screens for the cattle program**

Analytical screen	Chemical group	Analytes
Veterinary medicines and pesticides	Anthelmintics	includes macrocyclic lactones, salicylanilides and benzimidazoles
	Antimicrobials	includes aminoglycosides, anticoccidials, beta lactams, quinolones, macrolides, nitrofurans, phenicols, sulfonamides and tetracyclines
	Hormones	includes stilbenes, corticosteroids, resorcylic acid lactones and androgenic steroids
	Other medicines	includes antiprotozoals, beta-agonists and non-steroidal anti-inflammatory drugs
	Pesticides	insecticides, fungicides and herbicides
Environmental contaminants	Dioxins	dioxins and dioxin-like PCBs
	Organochlorines	aldrin, chlordane, dieldrin, DDT, dioxins and dioxin-like PCBs, endrin, HCB, HCH, heptachlor, lindane, mirex, PCBs and pentachlorobenzene
	Metals	antimony, arsenic, cadmium, lead and mercury

## Results

In 2022-23, a total of 5,300 samples were collected for analysis. The results were compared with the Australian standards and where appropriate, relevant international standards.

A summary of cattle sample compliance with Australian standards over the past 6 years is provided in Table 2. The results highlight excellent compliance with Australian standards and demonstrate the strong commitment of the cattle industry to good agricultural practice. The consistently high compliance rates help maintain the reputation and integrity of Australian beef in domestic and international markets.

The yearly summary datasets for the cattle program are located on the department's website [agriculture.gov.au/nrs-results-publications](http://agriculture.gov.au/nrs-results-publications)

**Table 2. Compliance rates for the past 6 years relative to Australian standards**

Years	Samples collected	Compliance rates (%)
2017–18	4,576	99.89
2018–19	4,877	99.94
2019–20	5,352	99.91
2020–21	5,649	99.96
2021–22	5,258	99.96
2022–23	5,300	99.98

## Laboratory selection and performance

The NRS contracts laboratories to analyse animal and plant product samples for pesticide/veterinary medicine residues and environmental contaminants.

Laboratories are selected through the Australian Government procurement process based on their proficiency and value for money. Laboratories must be accredited to international standard ISO/IEC 17025 at commencement of testing.

Contracted laboratories are proficiency tested by the NRS to ensure the validity of their analytical results and technical competence.

The NRS has been accredited by the National Association of Testing Authorities as a proficiency test provider since July 2005.



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## International export markets

The NRS maintains information on maximum residue limits (MRLs) that apply to Australia and major export markets for industries supported by the NRS. All analysis results are checked for compliance with the Australian standards and relevant international MRLs.

For the Australian MRL standard see [legislation.gov.au/Series/F2023L01350](https://legislation.gov.au/Series/F2023L01350)



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