



National Residue Survey 2015–16

Fish



The National Residue Survey (NRS) is an essential part of Australia's system for monitoring the levels of, and associated risks from, pesticides and veterinary medicine residues in Australian food products.

Residue monitoring programmes run by the NRS are vital in facilitating and encouraging ongoing access to domestic and export markets. They support Australia's food industry and primary producers who provide quality animal, grain and horticulture products for export.

The fish programme

The fish programme involves the testing of Australian aquaculture and wild-caught seafood fisheries products for a range of pesticides, veterinary medicines and environmental contaminants. The programme has been operating since the early 1990s and is currently funded by the Commonwealth Fisheries Association (CFA).

The programme:

- ensures fish exports satisfy Australian export certification and importing country requirements
- supports industry quality assurance initiatives
- enables domestic fish processing facilities to satisfy state and territory government regulatory authority licensing requirements
- provides evidence of good practice in the use of pesticides and veterinary medicines by the aquaculture industry

Key points

- The Australian fish industry continues to demonstrate a high degree of compliance with Australian standards.
- The compliance rate in 2015–16 was 100 per cent.
- National Residue Survey is certified to ISO 9001 Quality Management Standards.

- delivers ongoing residue testing on behalf of the seafood industry to ensure access for new and existing markets.

The supply of samples is shared by all eligible premises ensuring that any financial burden is spread across the industry. The department does not reimburse companies for the cost of the sample as it is considered an ongoing cost associated with market access and demonstrated compliance with export and importing country requirements.

Chemical screen

Chemical screens are developed in consultation with the fish industry and take into account Australian registered chemicals, chemical residue profiles and overseas market requirements. Fish samples are screened for a range of different pesticides, veterinary medicines and environmental contaminants, as outlined in Table 1.

Sample collection

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

Authorised government officers collect samples based on sample collection requests from the NRS. The requests specify the product species required for collection, and the period during which the sample is to be taken.

Fish are randomly selected at aquaculture farms or processing establishments by authorised government officers. Once collected, the samples are freighted overnight directly to the NRS receipt and dispatch facility, where they are sorted into batches and sent to a contract laboratory for analysis.

TABLE 1 Chemical screens for the 2015–16 fish programme

| Chemical screen | Chemical group | Analytes |
|--|----------------|---|
| Veterinary drugs and animal treatments | Anthelmintics | Approximately 10 analytes including macrocyclic lactones and others |
| | Antibiotics | Approximately 47 analytes including aminoglycosides, antimicrobials, beta lactams, cephalosporins, macrolides, nitrofurans, sulphonamides, tetracyclines and others |
| | Hormones | Approximately 8 analytes including steroids, stilbenes and trenbolone |
| Environmental contaminants and additives | Contaminants | Approximately 12 analytes including organochlorine insecticides and persistent organic pollutants |
| | Insecticides | Approximately 2 analytes including spinetoram and spinosad |
| | Metals | Approximately 6 analytes including antimony, arsenic, cadmium, chromium, lead and mercury |
| | Additives | Approximately 4 analytes including crystal violet and malachite green |



TABLE 2 Chemical group and compliance rates for the fish programme in 2015–16

| Chemical screen | Chemical group | Analytical tests | Compliance rates (%) |
|--|----------------|------------------|----------------------|
| Veterinary drugs and animal treatments | Anthelmintics | 18 | 100 |
| | Antibiotics | 80 | 100 |
| | Hormones | 8 | 100 |
| Environmental contaminants and additives | Contaminants | 8 | 100 |
| | Insecticides | 18 | 100 |
| | Metals | 118 | 100 |
| | Dyes | 12 | 100 |

TABLE 3 The overall compliance rates for the fish programme over the past five years

| Years | Origin | Compliance rates (%) |
|---------|-------------|----------------------|
| 2011–12 | Aquaculture | 100 |
| | Wild-caught | 85.61 |
| 2012–13 | Aquaculture | 98.95 |
| | Wild-caught | 83.33 |
| 2013–14 | Aquaculture | 99.31 |
| | Wild-caught | 97.39 |
| 2014–15 | Aquaculture | 100 |
| | Wild-caught | 100 |
| 2015–16 | Aquaculture | 100 |
| | Wild-caught | 100 |

Results

In 2015-16 a total of 154 aquaculture and 70 wild caught samples were analysed, and the results were compared with the relevant Australian standards. The number of screens for each chemical group and their respective compliance rates are shown in Table 2.

The overall compliance rate was 100 per cent in 2015–16. Over the past five years the Australian fish industry has shown a high degree of compliance with Australian standards as shown in Table 3. This highlights Australia's excellent compliance status and helps maintain the reputation and integrity of Australian fish in international and domestic markets.

Laboratory selection and performance

The NRS contracts laboratories to analyse samples for chemical residues and environmental contaminants. Laboratories are selected through the Australian Government tendering process on the basis of their proficiency, accreditation against international standards (ISO/IEC 17025) and value for money.

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 (NATA) as a proficiency test provider since July 2005.

International export markets

The NRS maintains a database of international maximum residue limits (MRLs) for countries that are major export markets for Australian animal and plant products.

All fish results are checked for compliance with Australian standards and relevant international MRLs. The database can be accessed at <https://www.edaff.gov.au/NRSMRLExternal/Public/Disclaimer.aspx>

National Residue Survey

The NRS is an operational unit within the Australian Government Department of Agriculture and Water Resources, and since 1992 has been funded by industries through levies or contracted by direct funding.

NRS programmes demonstrate the long term integrity of Australian food producers in compliance with legislation, chemical use guidelines and international standards. They comply with an ISO 9001:2008 quality management system and form part of a national pesticide and veterinary medicine residue management framework.

These programmes assist primary industries to identify potential residue issues; such as compliance with international standards, good agricultural practice, and can indicate where follow-up action is needed to maintain Australia's reputation as a supplier of clean produce.



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