



Australian Grain Industry – Code of Practice Technical Guideline Document

No. 15 MANAGING CHEMICAL RESIDUE VIOLATIONS

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Grain Trade Australia**

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Technical Guideline Document

No. 15 Managing Chemical Residue Violations

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No.15 – Managing Chemical Residue Violations

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1. Application

This document refers to the actions to be taken when a chemical residue violation is detected. This includes legal requirements for reporting such incidents.

2. Discussion on Chemical Residue Violations

2.1 What is a Chemical Residue Violation

In the context of this Technical Guideline Document, a chemical residue violation is the presence of a chemical above a specified limit (maximum residue limit or MRL).

The chemical may be defined as any pesticide used in the agricultural industry that may be associated with grain or grain related products.

The MRL that should not be exceeded may be set by a number of means including:

- a) MRLs that may or may not have legal status:
 - The domestic or international customer, via a contract.
 - The marketer. For example, where no reference is made in the contract to limits set.
 - The Australian grain industry. For example, the Recommended Outturn Limit (ROL) as outlined in the document “Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances for the applicable season”. Note that this ROL value does not have any legal basis unless otherwise specified.
- b) MRLs that have a government legal status:
 - Australian regulatory bodies such as the Australian Pesticides and Veterinary Medicines Authority (APVMA), Food Standards Australia and New Zealand (FSANZ) who set standards domestically.
 - Overseas country regulatory bodies that set MRLs on commodities imported into their country.
 - International MRL Standards such as those set by the Codex Alimentarius Commission.

Refer to:

- Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances (produced annually) <http://www.graintrade.org.au/nwpgp>
- APVMA Australian Agricultural and Veterinary Chemicals Code Instrument No. 4 (MRL Standard) 2012 <https://www.legislation.gov.au/Series/F2012L02501>
- APVMA <http://apvma.gov.au/>
- FSANZ Australian Food Standards Code <http://www.foodstandards.gov.au/code/Pages/default.aspx>
- Codex MRLs <http://www.fao.org/fao-who-codexalimentarius/standards/pestres/pesticides/en/>
- NRS Australian and Overseas MRL database <http://apps.agriculture.gov.au/NRSMRLExternal/Public/Disclaimer.aspx>

2.2 What is the Cause of a Chemical Residue Violation

There are many causes of a chemical residue violation. These may include:

- Application of a chemical not approved for use.
- Application of a chemical above legislated rates (above label rates or not in compliance with label directions).
- Failure to adhere to other label requirements such as with-holding periods.
- Incorrect application of a chemical via any other means such as by a non-approved person.

- Multiple applications of a chemical leading to “chemical residue build-up”.
- Contamination of a commodity with a non-approved chemical via means such as inadvertent contamination from infrastructure where grain with that chemical was previously handled.
- Supply of grain that may have been correctly treated, to a market with a lower MRL than the Australian MRL.

2.3 How are Chemical Residue Violations Detected

Chemical misuse or a resulting MRL violation may be detected through a number of means:

- a) Industry
 - The owner of the grain, or on their behalf, a third party obtaining a representative sample for analytical testing. For example, a marketer sampling and testing grain to confirm contractual specifications will be met if that grain is supplied.
 - An external party who doesn't own the grain, but who has some control of that grain, obtaining a representative sample for analytical testing. For example, a Storage Provider may sample and test as part of their Storage and Handling Contract obligations.
 - The buyer of the grain obtaining a representative sample for analytical testing to confirm the grain purchased meets their requirements.
 - An industry participant, who may or may not be as above, filing a complaint on the quality of the grain. This may relate to:
 - A contractual dispute; and
 - A complaint to Grain Trade Australia (GTA) as part of the Australian Grain Industry Code of Practice Complaints Handling Procedure.
- b) Regulator/Government
 - Samples may be taken and assessed as part of the National Residue Survey (NRS) conducted by the Australian government.
 - Samples may be taken as assessed as part of an Australian State Government traceback system, that may be as a result of a violation detected by the NRS or via a specific State Government targeted testing regime.
 - A government chemical residue monitoring program such as the Australian Total Diet Study conducted by FSANZ.
 - The importing country government obtaining representative samples of imported commodities and testing for compliance with their national regulations.

Refer to

- NRS Grains Program <http://www.agriculture.gov.au/ag-farm-food/food/nrs/plant-product-testing>
- Australian Total Diet Study <http://www.foodstandards.gov.au/science/surveillance/Pages/australiantotaldiets1914.aspx>

2.4 Obligations on Industry

As outlined in the Code of Practice (section 2.4):

“At all times, the grain industry complies with all regulatory controls for chemicals. The key elements to the regulatory system in Australia and overseas are:

Australia

- Chemicals are registered for both in-crop and post-harvest use on grain. In Australia there are two Government bodies (Australian Pesticides and Veterinary Medicines Authority (APVMA) and Food Standards Australia New Zealand (FSANZ)) responsible for registration of chemicals and for determining MRLs of chemicals^{1, 2};
- Australia is a full signatory to the Codex Alimentarius Commission³, an international body created by the World Health Organisation and the Food and Agriculture Organization to develop, amongst other things, international MRLs. The Australian MRLs and the registration and use of chemicals, are binding in all Australian States and Territories;
- The Australian Government Department of Agriculture and Water Resources (DAWR) control exports under the Export Control Act 1982⁴. Plant Export Operations⁵ is part of DAWR and is responsible for this task. Plant Export Operations interfaces with the grain industry through various means such as the Grain and Plant Products Export Industry Consultative Committee⁶; and
- The Australian National Residue Survey (NRS)⁷ gathers information on chemical residues and environmental contaminants in the products of participating industries such as grain. Samples are taken from a range of domestic grain products, container exports and all bulk exports of prescribed grains and assessed for levels of a range of chemical compounds. Where MRL violations are detected, the NRS initiates a trace-back system to determine the cause. That trace-back system is done by the relevant regulatory authority in each State and Territory as required by legislation. As required by legislation, NRS reports on those violations. Under this Code, the following industry sectors are required to actively participate on a continuous basis in the NRS grains residue monitoring program, and to comply with any NRS directions applying to that program:
 - All grain organisations out-turning on the domestic market to an end-processor (who is not defined as a primary producer) ;
 - All bulk grain exporters;
 - All container exporters; and
 - Where relevant, operators of facilities who provide grain as part of the above services.

Export:

- Each importing country operates its own legislation in relation to chemicals residues permitted on imported grain. Industry uses the information available to:
 - Understand those requirements prior to supply of grain;
 - Implement measures to meet those requirements; and
 - Implement corrective action practices when residues on grain are identified that do not meet importing country MRLs.

As required by legislation industry will not trade (i.e., supply) in grain on the domestic or export market that contains a chemical in violation of relevant legislation

Where required by legislation:

- If any intentional mis-use of a chemical is identified, it is to be reported to the relevant authority; and
- Where an MRL is found to be in violation of market regulations, it is to be reported to authorities and the cause investigated as relevant.”

¹ The Australian MRL database - www.apvma.gov.au/residues/mrl.shtml The Food Standards Australia New Zealand (FSANZ) database - www.foodstandards.gov.au

² Maximum Residue Limits of agricultural and veterinary chemicals and associated substances in food commodities – <https://www.legislation.gov.au/Series/F2012L02501>

³ Codex Alimentarius Commission - <http://www.codexalimentarius.org/>

⁴ Export Control (Plants and Plant Products) Orders 2005 - <http://www.comlaw.gov.au/Series/C2004A02606>

⁵ Exporting grain from Australia - <http://www.agriculture.gov.au/export/controlled-goods/plants-plant-products>

⁶ Grain and Plant Products Export Industry Consultative Committee - <http://www.agriculture.gov.au/biosecurity/partnerships/consultative-committees/gppeicc>

⁷ National Residue Survey - <http://www.agriculture.gov.au/ag-farm-food/food/nrs/plant-product-testing>

Unless industry complies with these obligations, the consequences can be severe, including:

- Financial penalties to the individual exporter;
- Loss of market to that exporter;
- Loss of consumer confidence in the importing country; and
- Impacts on all industry such as increased monitoring by the importing country government (requiring sampling and testing, certification, leading to increased costs for exports) or closure of the market to all Australian exporters.

To date, the Australian grains industry takes these matters seriously and has a very good record for MRL compliance and chemical use.

2.5 Actions to Undertake

When a chemical residue violation has been detected, there are a number of actions that can be taken. Depending on the nature of and who identified the violation, these may include where relevant:

- Confirming the violation;
- Reporting the violation if required;
- Taking remedial action; and
- Taking action to reduce future incidents.

2.5.1 Confirming the Violation

The initial violation should be confirmed to ensure that it is valid. This may involve a number of steps including:

- Contacting all parties involved confirming the sample and results relate to the grain in question.
- Ensuring all samples analysed were representative of the grain.
- Confirm results as reported by the laboratory are correct. Includes an understanding of the laboratory method used and the variability in testing.
- Confirm the market requirement.

Note that where the violation has been advised to the industry stakeholder by the NRS, the NRS has already confirmed the violation.

2.5.2 Reporting the Violation

When a chemical residue violation has occurred, in certain circumstances the violation must be reported to relevant authorities to enable an investigation to occur. However this is not always the case.

- a) Violation of a Market/Contract Requirement
 - This is generally a commercial matter between the buyer and seller;
 - It is generally not a regulatory matter; and
 - An official government investigation is usually not required.

b) NRS

- After confirmation of a violation under the NRS program, the relevant Australian state or territory government and the grain owner / handler and marketer are notified of the residue violation by the NRS.
- It is standard industry practice, as outlined in the Code of Practice, that industry does not supply grain that does not comply with legislated requirements. Hence in the situation where the NRS advises a marketer/exporter that the grain consignment contains a chemical residue in contravention of an importing country MRL, the marketer/exporter is required to undertake remedial action, generally being diverting the cargo to an alternative market.
- Should the need arise, the NRS Grains Program includes a traceback investigation function which allows government officers, in cooperation with the particular grain company, to conduct an examination of any residue detection in grain over the MRL. The investigators trace the grain sample back through grain handler to the property of origin to determine the cause of the residue violation.

c) Mis-Use of a Chemical

- Where industry detects the mis-use of a chemical, industry is required under the Code of Practice to report that mis-use to the relevant authority.

The relevant authorities are as listed below:

APVMA

For reporting of chemicals that don't have an APVMA or NRA registration number on the product, meaning they are not allowed to be used in Australia. For example, a chemical residue is detected for which there is no MRL (and thus registered use) in Australia. <http://apvma.gov.au/node/18506>

States and Territories

The following link provides general contacts for each State and Territory. <http://apvma.gov.au/node/3190>

For specific State contacts, refer to the following:

- NSW – Environment and Heritage is responsible for review of chemical mis-use
<http://www.epa.nsw.gov.au/pesticides/pestmisuse.htm>
- QLD – Biosecurity Queensland is responsible for review of chemical mis-use
<https://www.business.qld.gov.au/industry/agriculture/land-management/chemical-controls/spray-drift-issues/who-report-spray-drift>
- SA – PIRSA is responsible for review of chemical mis-use.
http://www.pir.sa.gov.au/biosecuritysa/ruralchem/chemical_misuse_including_spray_drift
- TAS – Department of Primary Industries, Parks, Water and Environment is responsible for review of chemical mis-use <http://dpiwpe.tas.gov.au/agriculture/agvet-chemicals/AgVet-Chemicals-Contacts>
- VIC – “DEPI” is responsible for investigating any Victorian residue violations detected through the NRS Plant Program <http://www.depi.vic.gov.au/agriculture-and-food/farm-management/chemical-use/agricultural-chemical-use/produce-monitoring-programs>
- WA – Department of Agriculture and Food, Western Australia is responsible for review of chemical mis-use <https://www.agric.wa.gov.au/plant-biosecurity/chemical-residues-crops>

2.5.3 Follow Up Actions

Following advice of an MRL violation and resolution of the incident, a number of steps must be undertaken and should be considered to prevent further incidents or minimise the risk of further incidents occurring.

Initially, the grain being supplied to the market that contains inappropriate chemical residues must be diverted to another market, or measures are to be taken to reduce the chemical residue level to a level where it is compliant with the market requirement. In such instances, it is also preferable for the marketer/exporter to advise the NRS of the remedial action taken. This will assist in their investigation and reporting needs.

Depending on the issue these future remedial actions may include:

- Review the contract with relevant parties to determine roles and responsibilities. This may include:
 - Ensuring the contract clearly stipulates quality requirements of all parties when grain ownership changes hands; and
 - Ensuring the quality of grain is validated when grain ownership changes hands. Depending on the end-use of the grain, the quality to be declared or required will vary but may include confirmation of the quality via
 - A Commodity Vendor Declaration (CVD);
 - Sampling/testing; and
 - Provision of analytical results and/or samples.
- Review the further use of supply chain participants who led to the initial issue
- Consider changes to existing sampling and testing arrangements. This may include:
 - Increased surveillance such as additional sampling and testing; and
 - Reducing levels of detection for those chemicals of interest.
- Conduct a risk management of the market to determine if risks of supplying that market are excessive;
- Determine if alternative suitable tools to minimise risks are being used e.g., CVDs;
- Review if training may assist to mitigate risks; and
- Determine if information available to assist minimising risk is being used. This may include:
 - The Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances for the applicable season;
 - MRL databases to keep up to date with MRL changes and how those regulations are applied in each market; and
 - External experts.

2.6 Who is Responsible for Reporting

While not legislated, compliance with the Australian Grain Industry Code of Practice requires that those parties aware of the chemical misuse report that incident to the relevant authorities. Failure to report the misuse means that industry stakeholder is non-compliant with the Code of Practice. In addition, if the mis-use is not reported, there remains limited incentive to the stakeholder responsible for the chemical mis-use to change their behaviour.

3. Examples of Violations & Mis-Use of Chemicals

The following are examples of the mis-use of chemicals where reporting to relevant authorities is required:

Chemical	Incident Type	Nature of Misuse
Any	Chemical residues detected when no treatment was certified	Treatment potentially occurred via an unauthorised person
Any	Chemical residues detected when no MRL exists and/or no label rate exists	Treatment not in compliance with registration of that chemical
Fumigant	Fumigant visually observed in transport vehicle	Fumigation in-transit not permitted
Fumigant	Fumigant detected at levels above the threshold limit value	Fumigation in-transit not permitted
Fumigant - Phosphine	Fumigant tables and/or pellets observed admixed with grain	Label violated as admixture not permitted on the label

A number of incidents regarding chemical violations may arise that may or may not require reporting to relevant authorities. In general these are handled on a commercial basis between the relevant parties:

Chemical	Incident Type	Nature of Violation
Any	Chemical residues detected above contract limit	Inadequate control of treatment, incorrect grain allocated/supplied
Any	Chemical residues detected above ROL	Inadequate control of treatment
Any	Chemical residues detected when not declared on the CVD	Improper use of the CVD and incorrect declaration
Any	Chemical residues detected when not declared on the CVD	Inadequate controls in place to prevent contamination through infrastructure

4. Further Information

- An Australian Approach to chemical residue management in grains - Programs and results <http://spiru.cgahr.ksu.edu/proj/iwcspp/pdf2/9/6324.pdf>
- Managing chemical cross contamination risks <http://www.depi.vic.gov.au/agriculture-and-food/farm-management/chemical-use/agricultural-chemical-use/chemical-residues/managing-chemical-residues-in-crops-and-produce/managing-chemical-cross-contamination-risks>
- Strategy to manage resistance to grain protection treatments in the Australian grain industry www.crcplantbiosecurity.com.au or <http://www.graintrade.org.au/nwpgp>
- The Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances for the applicable season <http://www.graintrade.org.au/nwpgp>
- The Grain Industry Code of Practice for the Management of Grain along the Supply Chain <http://www.graintrade.org.au/grain-industry-codes>