GRAIN TRADE AUSTRALIA

Australian Government
Department of Agriculture

Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances 2019/20 As at 1 August 2019

Contents

1. Definitions....3
2. Introduction....4
3. Pesticide Residue Free (PRF) Grain....6
4. Industry Outturn Target of ½ (50%) the Australian MRL....6
5. Utilising this Document....7
6. Default Policies....7
7. Wheat....7
   - 7.1. Wheat – Milling Wheat – Export....7
   - 7.2. Wheat – Milling Wheat – Domestic....12
   - 7.3. Wheat – Starch and Gluten – Domestic....13
   - 7.4. Wheat – Stockfeed – Domestic & Export....13
8. Barley....14
   - 8.1. Barley – Malting Barley – Export....14
   - 8.2. Barley – Malting Barley – Domestic....17
   - 8.3. Barley – Stockfeed Barley – Domestic and Export....18
9. Other Cereal Grains....20
   - 9.1. Other Cereal Grains – Export....21
   - 9.2. Other Cereal Grains – Domestic....25
10. Pulses....26
   - 10.1. Pulses – Export....27
   - 10.2. Pulses – Domestic....28
11. Oilseeds....29
   - 11.1. Oilseeds – Export....29
   - 11.2. Oilseeds – Domestic....31
12. Structural and/or Handling Equipment Treatments....32
13. Pre-Shipment Fumigation....33
14. Capping Treatments....33

The National Residue Survey (NRS) in consultation with a range of industry stakeholders originally developed this document.

It continues to be co-ordinated by the NRS and updated following the annual National Working Party on Grain Protection Australian Grain Storage & Protection Conference.

This document has the imprimatur of Grain Producers Australia, Grain Growers Limited and Grain Trade Australia.

DISCLAIMER
This document which has had input from government, Grain Trade Australia (GTA) and the wider grains industry, endeavours to provide information in accordance with the highest standards. The information and advice may not be correct due to a variety of reasons including changes to foreign maximum residue limits (MRL), inconclusive advice from overseas governments and a number of other technical reasons. To the extent permitted by law, NRS, GTA and the grains industry are not liable, whether in negligence or otherwise, for inaccuracies of this nature or for advice which are relied on and cause loss, damage or injury of any kind.

1. Definitions

APVMA – Australian Pesticides and Veterinary Medicines Authority – is the Australian government authority responsible for the assessment and registration of pesticides and veterinary medicines. APVMA sets MRLs for pesticides and veterinary medicines in agricultural produce.

Bulk Handler – This definition is applied by the APVMA for the use of Spinosad only:

"*Bulk Handler means a person who carries out the business of storage of grain for reward and who has a current certified ISO 9001, ISO 22000 or other internationally recognised quality assurance system, where that system requires:*

(a) The Bulk Handler to not accept a consignment of grain from a supplier unless the supplier has provided a declaration of any prior chemical treatment of the grain;
(b) Residue testing of such consignments by the Bulk Handler when appropriate;
(c) The keeping of records of any chemical treatment carried out by or on behalf of the Bulk Handler;
(d) Where required by contract/trade terms the provision by the Bulk Handler of a declaration of any prior chemical treatment of the grain when the Bulk Handler supplies the grain to another person; and
(e) Participation in the National Residue Survey."

Bulk Handling Authorities – for those chemicals where the label states "*In WA for use by Bulk Handling Authorities only*", the following definition applies:

(a) A person who carries out a business of storage of grain for reward; and
(b) Does not carry out that business on a farm; and
(c) The business operates in Western Australia

Cereal grain – for the purposes of this document, only refers to wheat, barley, oat, sorghum, triticale, cereal rye and maize.

Codex – Codex Alimentarius Commission – is the international body responsible for developing food standards and guidelines for protecting the health of the consumers and ensuring fair trade practices in the food trade. Codex sets international MRLs. Fully adopted MRLs that have gone through the Codex Step process are designated as CXLs.

FSANZ – Food Standards Australia New Zealand – administers the '*Australia New Zealand Food Standards Code'*. The code lists requirements for foods such as additives, food safety, labelling, GM foods and MRLs for Australian food.

LOD – Limit of Detection – is the minimum concentration of a residue that can be detected but not necessarily quantified as an exact value. Sometimes the MRL, LOR and LOD can be at the same level.

LOR – Limit of Reporting – is the minimum concentration of a residue used for reporting purposes. Results of analyses lower than the LOR are not generally included in laboratory results reports.

Methyl Bromide - is an organic halogen compound used to fumigate grain, with the chemical formula CH_3Br. MRLs may apply to methyl bromide or inorganic bromide. Inorganic bromide may sometimes be recorded as bromide ion or measured as bromide ion. Note that inorganic bromide also occurs at natural levels in some grains.

MRL – Maximum Residue Limit – is defined as the maximum concentration of a residue that is legally permitted or recognised as acceptable in or on a food, agricultural commodity or animal feed. It results from the officially authorised safe use of an agricultural or veterinary chemical, known as good agricultural practice (GAP). The concentration is expressed in milligrams per kilogram (mg/kg) of the commodity.

NRS - National Residue Survey - The NRS is an operational unit within the Australian Government Department of Agriculture and Water Resources. The NRS monitors residues of pesticides, veterinary medicines and environmental contaminants in Australian food commodities. The residue monitoring programs are funded by statutory NRS levies on agricultural production or farm-gate value. NRS residue monitoring results help facilitate Australia's access to key export and domestic markets for participating industries by underpinning industry quality assurance programs.

Phosphine – is a fumigant with the chemical formula PH_3. MRLs may be recorded as hydrogen phosphide or metallic phosphides (such as aluminium, magnesium and zinc).

PRF – Pesticide Residue Free – means pesticide residue free but in practice, it refers to free of post-harvest grain protectant treatments. Please see Section 2 for a broader description.

ROL – Recommended Outturn Limit – is a maximum recommended pesticide residue limit for various contact insecticides that has been agreed and used within the Australian grains industry. ROLs specified in this document do not have any legal basis.

Sulfuryl fluoride – is a fumigant with the chemical formula SO_2F_2. MRLs may apply to sulfuryl fluoride or inorganic fluoride (fluoride ion).

T – When placed next to an Australian MRL, means that a temporary MRL is established within Australia.

2. Introduction

The purpose of this document is to provide advice on post-harvest chemicals registered for use in the treatment of stored grain in Australia and the MRLs that

apply to those chemicals on grains marketed in Australia and overseas. This document also lists those chemicals registered for use as a structural treatment in Australia.

The National Working Party on Grain Protection (NWPGP) meets on an annual basis to discuss common issues related to chemical usage and market requirements for MRLs. The NWPGP continues to agree that this document is maintained by the NRS with substantial input from a NWPGP sub-committee. It is to be available to industry through both the NRS and GTA website.

All grain sold within Australia must comply with the Food Standards Australia New Zealand, Food Standards Code http://www.foodstandards.gov.au/code/Pages/default.aspx, and all exported grains must also comply with the Food Standards Code at the time of exportation. In addition, States and Territories have pesticide control-of-use legislation that determines how agricultural chemicals are to be used. Most of the jurisdictions also require chemical treatments to be applied in such a manner that any resultant residue is under the Australian Pesticides and Veterinary Medicines (APVMA) MRLs – Australian MRLs can be found at the ComLaw website at https://www.legislation.gov.au/Series/F2019L01105. In cases where grain commodity/chemical combinations do not have MRLs in either the Food Standards Code or the APVMA MRLs, zero tolerance applies

Most countries have either set their own MRLs or default to Codex Alimentarius Commission (Codex) residue standards or a combination of both.

Codex is an international standard setting organisation that encourages the use of world-wide MRLs to facilitate the trade in agricultural commodities. Additionally, Codex MRLs are recognised as the benchmark in international trade by the WTO in the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement). Codex MRLs may be utilised by WTO in dispute resolutions.

However, not all countries recognise Codex standards. There may not be a Codex MRL for all chemicals/commodities. Additionally, some countries are members of regional standard setting groups and others have default limits for chemical / commodity combinations. The default limit varies by country.

Some of Australia's overseas markets have traditionally received pesticide residue free (PRF) grain from Australian exporters. The decision to supply PRF grain was originally agreed within the Grains Industry when there were difficulties in determining the pesticide residue requirements of many major markets. Those PRF outturn standards are often set by industry, or major marketing organisations, based on a risk assessment of the importing country requirements. The marketing imperatives may be more stringent than foreign government standards established in the importing country. PRF markets are listed in this document and exporters should be wary of supplying non-PRF grain to those markets listed as PRF.

This document in the main refers to contact insecticides for registered post-harvest grain treatments and grain fumigants. It should be noted that all the compounds listed in this document may be applied providing they are registered for that grain commodity by the APVMA and are used in accordance with applicable labels. All

treatments must also be conducted in accordance with State and Territory regulations where applicable. The treatment must also be compatible with permitted residue levels applicable for the market being supplied.

Periodically, APVMA issues minor use permits for off label use of chemicals. These uses are typically for unusual circumstances. Permits are usually issued for pre-harvest or for in-crop treatments but the situation may arise where a post-harvest grain permit is issued. An example would be where APVMA may issue a permit to control a specific insect in a grain crop where the numbers have built up in a specific area unexpectedly and threatens the crop in that region. In these situations, importing countries may not have a MRL and there may be a risk to trade. Users of chemicals under permit should contact purchasers of grain to ascertain whether the applications will impact on saleability of the grain to certain markets.

3. Pesticide Residue Free (PRF) Grain

PRF grain is generally understood to mean pesticide residue free. In practice, it originally meant Grain Protectant Residue Free. It is possible for PRF grain to contain residues arising from sources other than grain protectants such as herbicides, in-crop applications of fungicides and insecticides, and from fumigants such as phosphine. PRF grain should not have any detectable chemical residues from treatments that are applied directly to the grain as grain protectants for storage purposes.

This situation has necessitated specific segregations of contact insecticide (grain protectant) free grain by the storage sector. Marketing decisions to export "Grain Protectant Residue Free" has worked extremely well with major import countries in the past. Exporters are strenuously encouraged to maintain this outturn level.

4. Industry Outturn Target of ½ (50%) the Australian MRL

In the late 1980s, the Grains Industry agreed to a target of ½ (50%) of the Australian MRL for all organophosphate grain protectants and various contact insecticides on outturn of all cereals to the human consumption and stockfeed markets in Australia and for international markets. This agreement does not apply to fumigants or new compounds such as spinosad. It also does not apply to Dichlorvos on cereal grains given the low APVMA MRL of 0.01mg/kg.

This major commitment was introduced in the late 1980s to reduce the amount of grain protectants in use because of:

- A perception that some markets were moving towards a requirement for wheat with lower levels of pesticide residues; and
- The regular emergence of insect populations that were resistant to residual grain protectants.

This agreement has continued to operate and will continue until further notice. As a result of this measure, Australia has been able to significantly reduce pesticide residue levels on all domestic and exported grain. The measure to move to ½ or 50% of the Australian MRL on outturn has been of major benefit to the Australian Grains

Industry in permitting it to export grain with pesticide residues at low levels commensurate with the requirements of many importing countries.

The need to continue utilising a target of ½ (50%) of the Australian MRL on outturn continues to receive extremely strong support from the NWPGP. The NWPGP agrees that the ½ (50%) of the MRL outturn target for these compounds continues to apply. It will continue to not apply to fumigants, new compounds and spinosad.

5. Utilising this Document

This document is for the use of grains industry participants and attempts to be as simple as possible in a complex commodity trading industry where import tolerances can differ significantly based on the end-use. The outturn requirements are grouped under crop type or commodity, followed by the end use and then the sector.

This document uses the term recommended outturn limit (ROL) instead of MRL where the standard is not the same as the Australian MRL. The ROL reflects situations where industry has recommended that the MRL should not apply because of market requirements. An example is where industry recommended that in the Australian domestic market grain should be outturned at ½ (50%) of the Australian MRL (see point 4 - Industry Outturn Target) or lower. PRF tolerances are also an unofficial standard but are vigorously recommended to be continued.

6. Default Policies

As noted above, varying default policies exist depending on the market. The default policy generally applies where a MRL does not exist for a specific chemical and commodity combination. In obtaining the correct MRL to apply when referencing the default policy for each chemical and commodity, reference should also be made to:

- The MRLs outlined in this document;
- The MRL as listed for the commodity on the importing country official government website;
- Whether the default policy refers to a specific MRL that is to apply or a MRL that may vary by chemical and commodity; and
- The categorisation of a commodity into a commodity group.

7. Wheat

7.1. Wheat – Milling Wheat – Export

This section applies to wheat exported from Australia in bulk, containers or bags. There may be differences between MRLs for milling wheat and stockfeed wheat in certain markets.

7.1.1 The traditional markets that have been identified for PRF wheat for market access purposes are listed below. These markets do have their own MRLs for various chemical/commodity combinations and are discussed in more detail

later. Exporters are encouraged to treat these markets as PRF and ensure that there are no grain protectant residues present. The markets include:

China	India
Italy	Japan
Korea (South or Republic of)	Spain
Taiwan	Thailand
Potentially other markets	

7.1.2 Chemical treatments that are normally allowable for PRF markets are:

Chemical Name	MRL (mg/kg)
bromide ion	50*
phosphine	0.1
sulfuryl fluoride	0.05

* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

7.1.3 The table below contains Codex MRLs (CXLs) and should be noted for those markets that recognise Codex. The Codex MRLs for grain protectants and fumigants are:

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	3.0
dichlorvos	7.0
fenitrothion	6.0
pirimiphos-methyl	7.0
deltamethrin	2.0#
methoprene	10.0
piperonyl butoxide	30.0
pyrethrins	0.3
spinosad	1.0~
carbaryl	2.0+
bromide ion	50*
phosphine	0.1
sulfuryl fluoride	0.05

\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
\+ Specific products only registered for use in Australia.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

7.1.4 The countries listed below may not follow Codex and have their own specific regulations covering pesticide limits.

a) China – China has its own MRL listing, with some MRLs adopted from Codex. Previously, wheat exported to China was PRF wheat and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	5.0
dichlorvos	0.1
fenitrothion	5.0
pirimiphos-methyl	5.0
deltamethrin	0.2#
piperonyl butoxide	30
spinosad	1.0~
methyl bromide	5.0*
phosphine	0.05
sulfuryl fluoride	0.1

\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as methyl bromide arising from methyl bromide fumigation.

b) India – India has its own MRL listing. Exporters are strongly advised to seek up-to-date information from Indian importers and the Indian Government before consigning commodities. Previously, wheat exported to India was PRF wheat and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
dichlorvos	7.0
chlorpyrifos-methyl	0.01^
fenitrothion	0.01^
pirimiphos-methyl	7.0
piperonyl butoxide	0.01^
carbaryl	2+
deltamethrin	2#
spinosad	0.01^
phosphine	0.01^
methyl bromide	0.01^*

\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
\+ Specific products only registered for use in Australia.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.
^ Limit applied where no MRL listed in legislation.

c) Indonesia – Indonesia has its own MRL listing. The following MRLs apply.

Chemical Name	MRL (mg/kg)
carbaryl	2.0+
chlorpyrifos-methyl	10.0
dichlorvos	7.0

\+ Specific products only registered for use in Australia.

d) Japan – Previously, wheat exported to Japan was PRF and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
carbaryl	2.0+
chlorpyrifos-methyl	10.0
dichlorvos	0.2
fenitrothion	10.0
pirimiphos-methyl	1.0
deltamethrin	2.0#
methoprene	5.0
piperonyl butoxide	24.0
pyrethrins	3.0
spinosad	2.0~
bromide ion	50*
phosphine	0.1
sulfuryl fluoride	0.1

\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
\+ Specific products only registered for use in Australia.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

e) Korea (South or Republic of) – Korea has now adopted Stage 2 of the Positive List System. This has resulted in many MRLs being lowered to a default level unless an Import Tolerance applies. Korea no longer has a complex default policy and does not defer to Codex. Previously, wheat exported to Korea was PRF and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	3.0~
dichlorvos	0.05"
fenitrothion	0.2"
piperonyl butoxide	0.2"
pirimiphos-methyl	7.0" ~
deltamethrin	2#~

Chemical Name	MRL (mg/kg)
methoprene	10.0~
spinosad	1.0++~
pyrethrins	3.0"
carbaryl	2.0+~
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride	0.05~

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
++ Various products registered in Australia - refer to label.
+ Specific products only registered for use in Australia.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.
" Expires 31 December 2021.
~ Import Tolerance.

f) Taiwan – Previously, wheat exported to Taiwan was PRF and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	5.0
deltamethrin	1.0#
dichlorvos	0.02
fenitrothion	0.5
methoprene	2.0
phosphine	0.1
piperonyl butoxide	15.0
pirimiphos-methyl	5.0
pyrethrins	0.3
carbaryl	0.02+
spinosad	1.0~

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
+ Specific products only registered for use in Australia.

g) Thailand – Thailand has indicated in unofficial communications that in accordance with food safety legislation, it will accept Codex MRLs. Previously, wheat exported to Thailand was PRF and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
chlorpyrifos methyl	3.0"
deltamethrin	2.0#"
dichlorvos	0.2

Chemical Name	MRL (mg/kg)
fenitrothion	6.0"
methoprene	10.0"
pirimiphos methyl	7.0"
carbaryl	2.0+"
piperonyl butoxide	30.0"
pyrethrins	0.3"
spinosad	1.0~"
methyl bromide	50*"
phosphine	0.1"
sulfuryl fluoride	0.05"

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
\+ Specific products only registered for use in Australia.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.
" Codex Default MRL.

7.1.5 Milling wheat exported to markets other than those referred to above must meet the foreign government MRLs. Exporters should note that in these countries MRLs may differ from those listed above.

As outlined in section 4, industry has agreed to outturn wheat to all countries with residue levels at ½ (50%) of the Australian MRL (see 4. Industry Outturn Target) providing it does not contravene the importing country MRL.

7.2. Wheat – Milling Wheat – Domestic

7.2.1 Includes wheat destined for the domestic flour milling market. Although the Australian wheat MRLs (as applied by the APVMA through State Government control-of-use legislation) are higher than those ROLs listed below, industry recommends that in the Australian domestic market, wheat should be outturned at ½ (50%) of the Australian MRL (see 4. Industry Outturn Target) and therefore the following ROLs should apply.

Chemical Name	ROL (mg/kg)
chlorpyrifos-methyl	5.0
dichlorvos	0.01
fenitrothion	5.0
pirimiphos-methyl	5.0
deltamethrin	1.0#
methoprene	1.0
piperonyl butoxide	10
pyrethrins	1.5
spinosad	1~
methyl bromide	50*

Chemical Name	ROL (mg/kg)
phosphine	0.1
sulfuryl fluoride	0.05
ethyl formate	^

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Recorded separately as inorganic bromide and methyl bromide, arising from methyl bromide fumigation and natural occurrence.
^ Permitted for use but no MRL required.
The Australian wheat milling industry has an agreed position that wheat is not to be treated with diatomaceous earth or any other inert silica dust.

7.3. Wheat – Starch and Gluten – Domestic

7.3.1 Includes wheat destined for the domestic starch and gluten trade. Industry recommends that in the Australian domestic market wheat for the starch and gluten trade should be outturned at ½ (50%) of the MRL (see Section 4. Industry Outturn Target) and therefore the following ROLs should apply.

Chemical Name	ROL (mg/kg)
chlorpyrifos-methyl #	5.0
fenitrothion	5.0
methoprene	1.0
spinosad	1~
pyrethrins +	1.5
methyl bromide	50*
phosphine	0.1
ethyl formate	^

Not accepted by some markets.
~ Various products registered in Australia - refer to label.
+ Associated with piperonyl butoxide in many products.
* Recorded separately as inorganic bromide and methyl bromide, arising from methyl bromide fumigation and natural occurrence.
^ Permitted for use but no MRL required.

7.4. Wheat – Stockfeed – Domestic & Export

7.4.1 Wheat that is designated for livestock feed within Australia must comply with Australian MRLs if being used in the domestic market although certain State and Territory jurisdictions do apply different MRLs for stockfeed.

The industry recommends that for the Australian stockfeed market, feed wheat

should be outturned at ½ (50%) of the MRL (see Section 4. Industry Outturn Target) and therefore the following ROLs should apply.

Chemical Name	ROL (mg/kg)
chlorpyrifos-methyl	5.0
dichlorvos	0.01
fenitrothion	5.0
pirimiphos-methyl	5.0
carbaryl	2.5+
deltamethrin	1.0#
methoprene	1.0
piperonyl butoxide	10.0
pyrethrins	3.0
spinosad	1~
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride	0.05
ethyl formate	^

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
\+ Specific products only registered for use in Australia.
~ Various products registered in Australia - refer to label.
* Recorded separately as inorganic bromide and methyl bromide, arising from methyl bromide fumigation and natural occurrence.
^ Permitted for use but no MRL required.

7.4.2 In the event that feed wheat is exported it must meet the overseas government MRLs. Exporters should note that in some countries different import tolerances for feed wheat are applied compared to milling wheat.

8. Barley

In some instances, malting barley and general purpose (e.g., for stockfeed) barley have the same MRLs within a particular country. For the purposes of this document, malting barley MRLs and permitted chemicals refer to all barley except barley for stockfeed. Barley that is exported for stockfeed may have different import tolerances applied in particular markets and is listed separately.

8.1. Barley – Malting Barley – Export

8.1.1 Chemical treatments that are normally allowable for PRF markets are:

Chemical Name	MRL (mg/kg)
phosphine	0.1
sulfuryl fluoride	0.05

8.1.2 The table below contains Codex MRLs (CXLs) and should be noted for those markets which recognise Codex. The Codex MRLs for grain protectants and fumigants are:

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	3.0^
fenitrothion	6.0
pirimiphos-methyl	7.0^
deltamethrin	2.0#
methoprene	10.0
piperonyl butoxide	30.0
pyrethrins	0.3
spinosad	1.0~
bromide ion	50*
phosphine	0.1
sulfuryl fluoride	0.05

^ The Australian barley industry has an agreed position that malting barley is not to be treated with chlorpyrifos-methyl, pirimiphos-methyl or carbaryl.

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.

~ Various products registered in Australia - refer to label.

* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence. The Australian barley industry has an agreed position that malting barley is not to be fumigated with methyl bromide.

8.1.3 The countries listed below may not adopt Codex MRLs and have their own specific regulations covering pesticide limits.

a) China – China has its own MRL listing, with some MRLs adopted from Codex.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	5.0^
deltamethrin	0.5#
piperonyl butoxide	30.0
dichlorvos	0.1
fenitrothion	5.0
spinosad	1.0~
methyl bromide	5.0*
phosphine	0.05

^ The Australian barley industry has an agreed position that malting barley is not to be treated with chlorpyrifos-methyl, pirimiphos-methyl or carbaryl.
# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as methyl bromide arising from methyl bromide fumigation. The Australian barley industry has an agreed position that malting barley is not to be fumigated with methyl bromide.

b) Japan - Previously, barley exported to Japan was PRF and exporters are strongly recommended to continue this practice. Industry should note that where no MRL is in place, a default limit MRL of 0.01 mg/kg will apply.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	6.0^
dichlorvos	0.2
fenitrothion	5.0
pirimiphos-methyl	1.0^
carbaryl	5.0^+
deltamethrin	2.0#
methoprene	5.0
piperonyl butoxide	24.0
pyrethrins	3.0
spinosad	2.0~
inorganic bromide	50*
phosphine	0.1
sulfuryl fluoride	0.1

^ The Australian barley industry has an agreed position that malting barley is not to be treated with chlorpyrifos-methyl, pirimiphos-methyl or carbaryl.
# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence. The Australian barley industry has an agreed position that malting barley is not to be fumigated with methyl bromide.

c) Taiwan

Chemical Name	MRL (mg/kg)
carbaryl	0.02^+
chlorpyrifos-methyl	3.0^
deltamethrin	1.0#
fenitrothion	0.3
dichlorvos	0.02

Chemical Name	MRL (mg/kg)
methoprene	2.0
phosphine	0.1
piperonyl butoxide	15.0
pirimiphos-methyl	5.0^
pyrethrins	0.3
spinosad	1.0~

^ The Australian barley industry has an agreed position that malting barley is not to be treated with chlorpyrifos-methyl, pirimiphos-methyl or carbaryl.

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.

\+ Specific products only registered for use in Australia.

~ Various products registered in Australia - refer to label.

8.1.4 In the event that malting barley is exported it must meet the relevant overseas government MRLs. The MRLs that apply may or may not be those as listed in 8.1.1 to 8.1.3 above.

8.2. Barley – Malting Barley – Domestic

8.2.1 Includes malting barley destined for the domestic malting market. Although the Australian barley MRLs (as applied by the APVMA through State Government control-of-use legislation) are higher than those ROLs listed below, industry recommends that in the Australian domestic market malting barley should be outturned at ½ (50%) of the MRL (see Section 4. Industry Outturn Target) and therefore the following ROLs should apply.

Chemical Name	ROL (mg/kg)
carbaryl	7.5^+
chlorpyrifos-methyl	5.0^
dichlorvos	0.01
deltamethrin	1.0#
fenitrothion	5.0
pirimiphos methyl	3.5^
methoprene	1.0
piperonyl butoxide	10.0
pyrethrins	1.5
methyl bromide	50*
phosphine	0.1
spinosad	1~
sulfuryl fluoride	0.05

^ The Australian barley industry has an agreed position that malting barley is not to be treated with chlorpyrifos-methyl, pirimiphos-methyl or carbaryl.

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
+ Specific products only registered for use in Australia.
~ Various products registered in Australia - refer to label.
* The Australian Barley industry has an agreed position that malting barley is not to be fumigated with methyl bromide. Recorded separately as inorganic bromide and methyl bromide, arising from methyl bromide fumigation and natural occurrence.

8.3. Barley – Stockfeed Barley – Domestic and Export

8.3.1 Barley that is designated for livestock feed within Australia must comply with Australian MRLs if being used in the domestic market although certain State and Territory jurisdictions do apply different MRLs for stockfeed.

The industry recommends that for the Australian stockfeed market, barley should be outturned at ½ (50%) of the MRL (see Section 4. Industry Outturn Target) and therefore the following ROLs should apply.

Chemical Name	ROL (mg/kg)
chlorpyrifos-methyl	5.0
dichlorvos	0.01
fenitrothion	5.0
pirimiphos-methyl	3.5
carbaryl	7.5+
deltamethrin	1.0#
methoprene	1.0
piperonyl butoxide	10.0
pyrethrins	1.5
spinosad	1~
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride	0.05
ethyl formate	^

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
+ Specific products only registered for use in Australia.
~ Various products registered in Australia - refer to label.
* Recorded separately as inorganic bromide and methyl bromide, arising from methyl bromide fumigation and natural occurrence.
^ Permitted for use but no MRL required for domestic only.

8.3.2 In the event that feed barley is exported it must meet the relevant overseas government MRLs. Exporters should note that in some countries different import tolerances are applied for barley for stockfeed and malting barley.

a) China – China has its own MRL listing, with some MRLs adopted from Codex.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	5.0
deltamethrin	0.5#
dichlorvos	0.1
fenitrothion	5.0
piperonyl butoxide	30.0
methyl bromide	5.0*
spinosad	1.0~
phosphine	0.05

\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as methyl bromide arising from methyl bromide fumigation.

b) South Korea (South or Republic of) - Korea has now adopted Stage 2 of the Positive List System. This has resulted in many MRLs being lowered to a default level unless an Import Tolerance applies. Korea no longer has a complex default policy and does not defer to Codex. Previously, barley exported to Korea was PRF and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	3.0"
dichlorvos	0.01^
fenitrothion	0.01^
piperonyl butoxide	0.01^
pirimiphos-methyl	5.0"
deltamethrin	0.01^#
methoprene	5.0"
pyrethrins	3.0"
spinosad	1.0++~
carbaryl	1+"
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride	0.05"

\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
++ Various products registered in Australia - refer to label.
\+ Specific products only registered for use in Australia.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.
" Expires 31 December 2021.
~ Import Tolerance

^ Default limit.

c) Taiwan

Chemical Name	MRL (mg/kg)
carbaryl	0.02
chlorpyrifos-methyl	3.0
deltamethrin	1.0#
fenitrothion	0.3
dichlorvos	0.02
methoprene	2.0
piperonyl butoxide	15.0
pirimiphos-methyl	5.0
spinosad	1.0~
pyrethrins	0.3
phosphine	0.1

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.

~ Various products registered in Australia - refer to label.

d) USA

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	6.0
deltamethrin	1.0#
methoprene	^
piperonyl butoxide	20.0
pyrethrins	3.0
spinosad	1.5~
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride	0.1

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.

^ Methoprene is exempt from the requirement of a tolerance in or on all food commodities when used to control insect larvae.

~ Various products registered in Australia - refer to label.

* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

9. Other Cereal Grains

Other Cereal Grains generally refers to cereal grains except wheat and barley. Please see the Definition of Cereal Grains. Different MRLs may apply for other cereal grains used for human consumption and stockfeed. For the purposes of this document, other cereal grains refer to their use as stockfeed and for human consumption.

9.1. Other Cereal Grains – Export

9.1.1 Chemical treatments that are normally allowable for PRF markets are:

Chemical Name	MRL (mg/kg)
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride	0.05

* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

9.1.2 The table below contains Codex MRLs (CXLs) and should be noted for those markets that recognise Codex. The Codex MRLs for grain protectants and fumigants are:

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	Nil
fenitrothion	6.0
pirimiphos-methyl	7.0
deltamethrin	2.0#
carbaryl - maize only	0.02+
methoprene	10.0
piperonyl butoxide	30.0
pyrethrins	0.3
spinosad	1.0~
bromide ion	50*
phosphine	0.1
sulfuryl fluoride	0.05

\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
\+ Specific products only registered for use in Australia.
~ Various products registered in Australia - refer to label.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

9.1.3 The countries listed below may not accept Codex MRLs and have their own specific regulations covering pesticide limits for other cereal grains. In the event that other cereal grains are exported they must meet the foreign government MRLs. Exporters should note that in some countries different import tolerances are applied for different uses of other cereal grains. Refer also to export stockfeed wheat and export stockfeed barley.

a) China (includes Cereal Rye, Maize, Oats, Sorghum & Triticale. Excludes Wheat & Barley) - China has its own MRL listing, with some MRLs adopted from Codex.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	5.0
deltamethrin	0.5#
dichlorvos (maize) dichlorvos (cereal rye, oats, sorghum, triticale)	0.2 0.1
fenitrothion	5.0
piperonyl butoxide	30
spinosad	1.0~
methyl bromide	5.0*
phosphine	0.05
sulfuryl fluoride (maize, sorghum only)	0.05

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as methyl bromide arising from methyl bromide fumigation.

b) Indonesia – Indonesia has its own MRL listing. The following MRLs apply to Other Cereal grains.

Chemical Name	MRL(mg/kg)
carbaryl - maize - sorghum	 0.02+ 10+
chlorpyrifos-methyl (sorghum)	10

+ Specific products only registered for use in Australia.

c) South Korea (South or Republic of) - Korea has now adopted Stage 2 of the Positive List System. This has resulted in many MRLs being lowered to a default level unless an Import Tolerance applies. Korea no longer has a complex default policy and does not defer to Codex. Previously, other cereal grains exported to Korea was PRF and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
Carbaryl+ - maize, oats, cereal rye - sorghum, triticale	 1.0" 0.01^
Chlorpyrifos-methyl - maize, sorghum - oats, cereal rye, triticale	 0.1" 0.01^

Chemical Name	MRL (mg/kg)
Deltamethrin - sorghum - maize - oats, cereal rye, triticale	 0.3# 0.1 0.01^
Dichlorvos - maize - oats, cereal rye, sorghum, triticale	 0.05" 0.01^
Fenitrothion - maize^ - oats, cereal rye, sorghum, triticale	 0.2" 0.01^
Pirimiphos methyl	5.0"
Methoprene - maize, oats, cereal rye, sorghum - triticale	 5.0" 0.01^
Pyrethrins - maize, oats, cereal rye, sorghum - triticale	 3" 0.01^
Piperonyl butoxide - maize - oats, cereal rye, sorghum, triticale	 30~ 0.01^
Spinosad++ - maize, oats, sorghum - cereal rye, triticale	 1.0~ 0.01^
Phosphine	0.1
Sulfuryl fluoride - maize, sorghum^ - oats, cereal rye, triticale	 0.05" 0.01^
Methyl Bromide	50*

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
\+ Specific products only registered for use in Australia.
++ Various products registered in Australia - refer to label.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.
" Expires 31 December 2021.
~ Import Tolerance.
^ Default limit.

d) Taiwan (except wheat and barley)

Chemical Name	MRL (mg/kg)
carbaryl+ - maize, sorghum - oats	 0.5 0.02
chlorpyrifos-methyl - oats, sorghum - maize	 3.0 0.02

Chemical Name	MRL (mg/kg)
deltamethrin - maize - oats - sorghum	 0.05# 0.02# 2.0#
fenitrothion - oats - sorghum - maize	 0.02 0.5 0.2
dichlorvos (maize, oats, sorghum)	0.02
methoprene - maize, sorghum - oats	 5.0 0.02
phosphine (maize, sorghum, triticale, oats, cereal rye)	0.1
piperonyl butoxide - maize, sorghum - triticale, oats, cereal rye	 8.0 15.0
pirimiphos-methyl - maize, sorghum - oats, cereal rye, triticale	 7.0 5.0
pyrethrins	0.3
spinosad (maize, oats, cereal rye, triticale, sorghum)	1.0~

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
\+ Specific products only registered for use in Australia.
~ Various products registered in Australia - refer to label.

e) USA (Sorghum only)

Chemical Name	MRL (mg/kg)
carbaryl	10+
chlorpyrifos-methyl	6.0
deltamethrin	1.0#
methoprene	^
pirimiphos-methyl	8.0
piperonyl butoxide	8.0
pyrethrins	1.0
spinosad	1.5~
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride	0.1

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
\+ Specific products only registered for use in Australia.

^ Methoprene is exempt from the requirement of a tolerance in or on all food commodities when used to control insect larvae.
~ Various products registered in Australia - refer to label.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

f) USA (except Sorghum, Wheat and Barley)

Chemical Name	MRL (mg/kg)
Carbaryl+ - corn - triticale	 0.02 1
chlorpyrifos-methyl (oat, triticale)	6.0
deltamethrin	1.0#
methoprene	^
piperonyl butoxide - oat - maize, cereal rye, triticale	 8.0 20
pirimiphos methyl (maize)	8.0
pyrethrins - oat - maize, cereal rye, triticale	 1 3
spinosad	1.5~
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride - maize - oat, triticale	 0.05 0.1

+ Specific products only registered for use in Australia.
# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
^ Methoprene is exempt from the requirement of a tolerance in or on all food commodities when used to control insect larvae.
~ Various products registered in Australia - refer to label.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

9.2. Other Cereal Grains – Domestic

9.2.1 Includes cereal grains other than wheat and barley destined for the domestic Australian human consumption and stockfeed market. Although the Australian MRLs (as applied by the APVMA through State Government control-of-use legislation) are higher than those ROLs listed below, industry recommends that in the Australian domestic market other cereal grains should be outturned at ½ (50%) of the MRL (see Section 4. Industry Outturn Target) and therefore the following ROLs should apply.

Chemical Name	ROL (mg/kg)
chlorpyrifos-methyl	5.0
dichlorvos	0.01
fenitrothion	5.0
pirimiphos-methyl - cereal rye, triticale - maize and oats	 5.0 3.5
carbaryl (feed grains except barley and sorghum) carbaryl (barley for stockfeed) carbaryl (sorghum for stockfeed)	2.5+ 7.5+ 5.0+
deltamethrin	1.0#
methoprene	1.0
piperonyl butoxide	10.0
pyrethrins	1.5
spinosad	1~
methyl bromide	50*
phosphine	0.1
sulfuryl fluoride	0.05
ethyl formate	^

+ Specific products only registered for use in Australia.
# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.
^ Permitted for use but no MRL required.

10.Pulses

Pulses includes but is not limited to field pea, chickpea, lupin, mung bean, cowpea, faba/broad bean, pigeon pea, lentil, vetch, navy bean and adzuki bean. Individual countries may have a separate list of commodities included under the definition of pulses. For the purposes of this document soybean is listed as an oilseed but where the pulse MRL is lower it is recommended to use that MRL.

Pulses may absorb chemicals from direct applications and surrounding surfaces. In most countries there are no or very few MRLs and any residue detection may be considered a contravention. Please consider the use of chemical compounds carefully and seek advice from the export or domestic market if unsure of market requirements.

Different MRLs may apply for pulses used for human consumption and stockfeed.

10.1. Pulses – Export

10.1.1 The table below contains Codex MRLs (CXLs) and should be noted for those markets that recognise Codex. The Codex MRLs for grain protectants and fumigants are:

Chemical Name	MRL (mg/kg)
malathion (beans, dry only)	2.0
deltamethrin	1.0#
piperonyl butoxide	0.2
pyrethrins	0.1

As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.

10.1.2 The countries listed below may not accept Codex MRLs and have their own specific regulations covering pesticide limits for pulses. In the event that pulses are exported, they must meet the foreign government MRLs.

a) China - China has its own MRL list, with some MRLs adopted from Codex. Previously, pulses exported to China were PRF and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
carbaryl - broad/faba beans, cowpea	 1.0+
chlorpyrifos-methyl - mung bean, field pea, adzuki bean, lentils, lupins, chickpea	 5.0
deltamethrin # - broad/faba beans, cowpeas - mung bean, adzuki bean, chickpea, lupins - field peas - lentils	 0.2 0.5 1.0 1.0
dichlorvos - broad/faba beans, cowpea - mung bean, field pea, adzuki bean, lentils, lupins, chickpea	 0.2 0.1
fenitrothion - broad/faba bean, cowpea - mung bean, field pea, adzuki bean, lentils, lupins, chickpea	 0.5 5.0
piperonyl butoxide - mung bean, field pea, adzuki bean, lentils, lupins, chickpea	 0.2
spinosad - broad/faba beans, cowpea	 0.3~
methyl bromide - mung bean, field pea, adzuki bean, lentils, lupins, chickpea	 5.0*

Chemical Name	MRL (mg/kg)
phosphine - mung bean, field pea, adzuki bean, lentils, lupins, chickpea	0.05

+ Specific products only registered for use in Australia.
# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as methyl bromide arising from methyl bromide fumigation.

b) European Union - The table below contains EU MRLs for pulses.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl	0.05
dichlorvos	0.01
fenitrothion	0.01
pirimiphos-methyl	0.01
carbaryl	0.01+
deltamethrin	0.2#
methoprene	0.02
pyrethrins	1.0
spinosad	0.02~
methyl bromide	30*
phosphine	0.01
sulfuryl fluoride	0.01

+ Specific products only registered for use in Australia.
# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

10.1.3 In the event that pulses are exported to other countries they must meet the relevant foreign government MRLs. The MRLs that apply may or may not be those as listed in 10.1.1 to 10.1.2 above.

10.2. Pulses – Domestic

10.2.1 The following MRLs apply for pulses to the Australian domestic market.

Chemical Name	MRL (mg/kg)
carbaryl	0.1+
chlorpyrifos-methyl (lupin, dry only)	10.0
dichlorvos	0.01
fenitrothion	0.1

Chemical Name	MRL (mg/kg)
malathion - lentil, dry & beans, dry only - other pulses	 8.0 2.0
deltamethrin	0.1
piperonyl butoxide	8*
spinosad	0.01
phosphine	0.01
ethyl formate	^

\+ Arising from structural treatment.
* Pulses are listed under Vegetables.
^ Permitted for use but no MRL required

11. Oilseeds

Oilseeds include but are not limited to canola (rapeseed), sunflower seed, safflower seed, linseed, soybean, cottonseed and mustard seed. Individual countries may have a separate list of commodities included under the definition of oilseeds. For the purposes of this document soybean is listed as an oilseed but where the pulse MRL is lower it is recommended to use that MRL.

Oilseeds readily absorb chemicals from direct applications and surrounding surfaces. In most countries there are no or very few MRLs and any residue detection may be considered a contravention. Please consider the use of chemical compounds carefully and seek advice from the export or domestic market if unsure of market requirements.

Different MRLs may apply for oilseeds and their processed products and for use in the human consumption and stockfeed markets.

11.1. Oilseeds – Export

11.1.1 The table below contains Codex MRLs and should be noted for those markets which recognise Codex. The Codex MRLs for grain protectants and fumigants are:

Chemical Name	MRL (mg/kg)
fenitrothion (soybean dry only)	0.01
malathion (cottonseed only)	20.0
methoprene (except peanut)	4
carbaryl (soybean dry and sunflower seed only)	0.2+
deltamethrin # ^ - rapeseed - sunflower - soybean dry	 0.2 0.05 1
piperonyl butoxide - peanuts - soybean dry	 1 0.2

Chemical Name	MRL (mg/kg)
Pyrethrins - peanuts only - soybean dry	 0.5^ 0.1
phosphine (peanuts only)	0.01
spinosad (cottonseed/soybean dry only)	0.01~

\+ Specific products only registered for use in Australia.
\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
^ Codex does not have a MRL for piperonyl butoxide on most oilseeds, which is a synergist in many deltamethrin and pyrethrin products.
~ Various products registered in Australia - refer to label.

11.1.2 The countries listed below may not accept Codex MRLs and have their own specific regulations covering pesticide limits for oilseeds. In the event that oilseeds are exported they must meet the foreign government MRLs.

a) China - China has its own MRL listing, with some MRLs adopted from Codex. Previously, oilseeds exported to China were PRF and exporters are strongly recommended to continue this practice.

Chemical Name	MRL (mg/kg)
carbaryl (soybean, cottonseed)	1.0 +
chlorpyrifos-methyl - soybean - cottonseed	 5.0 0.02
deltamethrin # - rapeseed, cottonseed - soybean/sunflower - peanut	 0.1 0.05 0.01
dichlorvos (cottonseed, soybean)	0.1
fenitrothion - soybean - cottonseed	 5.0 0.1
piperonyl butoxide - peanut - soybean	 1 0.2
spinosad - cottonseed - soybean	 0.1~ 0.01~
methyl bromide (soybean)	5.0*
phosphine - mustard seed - soybean	 0.01 0.05

\+ Specific products only registered for use in Australia.
\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.

~ Various products registered in Australia - refer to label.
* Measured as methyl bromide arising from methyl bromide fumigation.

b) European Union - The table below contains EU MRLs for oilseeds.

Chemical Name	MRL (mg/kg)
carbaryl	0.05+
chlorpyrifos-methyl	0.05
dichlorvos	0.01
fenitrothion - soybean - other oilseeds	 0.01 0.02
malathion	0.02
pirimiphos-methyl	0.5
deltamethrin (except below) # - rapeseed (canola) - mustard seed - sunflower seed	0.02 0.2 0.07 0.05
methoprene	0.05
pyrethrins	3.0
methyl bromide except peanuts	20* 50
phosphine	0.05
spinosad	0.02~
sulfuryl fluoride	0.01

+ Specific products only registered for use in Australia.
# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.
* Measured as inorganic bromide arising from methyl bromide fumigation and natural occurrence.

11.1.3 In the event that oilseeds are exported to other markets they must meet the relevant foreign government MRLs. The MRLs that apply may or may not be those as listed in 11.1.1 to 11.1.2 above.

11.2. Oilseeds – Domestic

11.2.1 The table below lists MRLs for oilseeds.

Chemical Name	MRL (mg/kg)
chlorpyrifos-methyl - cottonseed - all other oilseeds	 0.01 0.15
dichlorvos	0.01
fenitrothion	0.1
malathion	

Chemical Name	MRL (mg/kg)
(linseed, rapeseed, safflower, sunflower only)	10
pirimiphos methyl (peanut only)	5
carbaryl - all other oilseeds - cottonseed	 0.1+ 3^
deltamethrin	0.1#
piperonyl butoxide	8.0
pyrethrins	1
spinosad (cottonseed only)	0.01~
phosphine	0.01
sulfuryl fluoride (peanut only)	7

\+ Arising from structural treatment.
^ Specific products only registered for use in Australia.
\# As agreed by Australian livestock industries, APVMA, the chemical registrant and grains industry, for use only under an approved QA or the approved Stewardship Program.
~ Various products registered in Australia - refer to label.

12.Structural and/or Handling Equipment Treatments

Any currently registered structural treatment may be used, however care must be taken that residues do not cross contaminate the grain subsequently stored in that facility or handled using that equipment. All labels detailing application rates must be followed for each chemical and commodity where linked.

Care must be taken to ensure that Australian and overseas countries MRLs are complied with when using the following treatments. Note that there are no Codex MRLs in place for azamethiphos.

Permitted chemicals are listed in the table below.

Permitted Chemicals	
Carbaryl	chlorpyrifos-methyl
deltamethrin	dichlorvos
Fenitrothion	pirimiphos-methyl
pyrethrins	sulfuryl fluoride
Desiccant dust treatments (activated amorphous silica or diatomaceous earth)	

CAUTION: The use of these compounds as a structural treatment has special significance when oilseeds come into contact with structures. Oilseeds readily absorb these chemicals and in many countries there are no MRLs and any residue detection is a contravention. The same situation may also apply to pulses and all other commodities. Domestic flour milling markets may also not permit the use of some of these treatments.

13.Pre-Shipment Fumigation

Many countries have a pre-shipment fumigation requirement, which is usually recorded in the contract. It may also be an importing country quarantine requirement. It is important for exporters to identify and comply with contractual and quarantine requirements. Refer to the Department of Agriculture MICoR website for pre-shipment fumigation requirements under relevant country quarantine laws https://micor.agriculture.gov.au/Plants/Pages/default.aspx

14.Capping Treatments

The use of diatomaceous earth, or other inert silica dust, as a capping treatment for wheat continues to be subject to agreement with the domestic flour milling industry.

Diatomaceous earth or other silica dusts should not be admixed to a general bulk of wheat if that grain is to be delivered to the domestic flour milling industry or general storage system for potential export.

Export markets may consider the detection of diatomaceous earth in all grain commodities as a physical or chemical contaminant and reject the consignment.