

minimising transfer  
of chemical residues onto  
**canola**  
during storage and handling



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# Minimising Transfer of Chemical Residues onto Canola during Storage and Handling

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Industry Reference

Produced on behalf of the Australian Oilseeds Industry by the

Australian Oilseeds Federation

# Industry Reference - Minimising Transfer of Chemicals onto Canola

## 1 INTRODUCTION

When storing and handling canola it is important to meet legal and market tolerances for chemical residues on canola. The presence of chemicals on canola at levels exceeding legal or market tolerances may cause rejection of a cargo.

The purpose of this document is to provide guidance to industry on practices to ensure legal and market tolerances for chemicals on canola can be met. It provides guidance to all operators of facilities and equipment when storing and handling canola. The document specifically deals with the use of chemical treatments applied to grains or within storage and handling infrastructure for the purposes of preventing or treating insect infestation, and the need to minimise transfer of these chemicals onto canola.

Canola may pick up residues of chemicals used as structural treatments or used to treat other commodities handled before canola, more readily than cereals or pulses.

This document is designed to minimise the incidence of chemical contamination in canola supplied to the domestic and export market. Following further research, a Code of Practice will be developed building on the information detailed in this document.

[R] Means a documented record should be maintained.

## 2 SCOPE OF DOCUMENT

This document refers to canola handled throughout the Australian supply chain. The supply chain includes canola growers, bulk handling companies, private storage agents, transport companies, containerising agents and any industry participant handling canola.

The information provided in this document should be considered applicable anywhere canola is stored or handled. The document is not specific to members of the Australian Oilseeds Federation, but intended for use by all canola industry participants.

### 3 FACILITIES

Facilities in this document include storage facilities where canola may be stored and any handling, packing and transport equipment that may be used to move canola.

#### Storage Facilities

Storage facilities include field bins and any temporary or permanent structures used to store canola. Canola should not be stored for lengthy periods in the field in open bins, which may expose the canola to inclement weather.

The storage facility should be clean and fit for the purpose. It should be free of any previously stored commodity, treated seed and residues of non-approved chemicals. It should not contain chemical residues that may be picked up by canola that would cause a violation of legal or market requirements.

It should be soundly constructed and prevent moisture ingress. It should be maintained in a clean, dry state, free from taint and abnormal odour. There should be adequate and effective drainage and good weed control to prevent harbourage of insects. [R]

Aeration facilities are encouraged. Ideally, storage facilities should also be sealed to a sufficient standard to allow the use of fumigants for effective control of stored product pests.

#### Handling Equipment

Handling equipment includes harvesters, augers, elevators, conveyors, cleaning facilities and any equipment used to load, unload or handle canola. This includes transport vehicles such as road trucks and rail wagons. It also includes containers and bulk vessel holds in which canola may be exported.

The handling equipment should be clean and fit for the purpose. It should be free of any previously stored commodity, treated seed and residues of non-approved chemicals. It should not contain chemical residues that may be picked up by canola that would cause a violation of market requirements.

It should be soundly constructed and only operated when moisture ingress will not occur. It should be maintained in a clean, dry state, free from taint and abnormal odour. [R]

## 4 MANAGEMENT OPTIONS

A combination of fumigation, aeration and sound hygiene practices are encouraged to be adopted by industry for insect control.

Prior to harvesting canola, growers should consider the effect of spraying for insects in the field (e.g. Rutherglen bug) on subsequent contamination of harvested canola. Comprehensive records of all chemical application should be kept as per relevant State and Territory regulations covering agricultural chemical use. [R]

There are some species of stored product insects that feed on sound, healthy seed of stored canola. Where insects are found, they should be controlled using appropriate insect infestation control measures such as a combination of fumigation, aeration and sound hygiene practices.

Canola should only be stored or handled in structures fit for the purpose. All storage and handling facilities should be clean, dry, free from any previously treated commodity and surface chemical residues, which may cause violation of domestic maximum residue limits (MRLs) or international tolerances. A pre filling check of the storage should be conducted and a record made of previous contents and/or structural treatments.

Canola should be harvested and stored with moisture levels below 8%. [R] Ideally, the canola should be dry before being put into storage and cooled as quickly as possible after harvest. If storing for any period of time, industry is urged to lower the canola seed temperature below 20°C as soon as possible after the canola is placed in storage.

In fully sealed storages, a combination of fumigation and cooling is currently the best strategy for maintenance of canola quality. Where fully sealed storages are not available, fumigation should only occur using Siroflo if appropriate. Records of all insect control activities including fumigations should be recorded. [R]

Regular monitoring of canola during the storage period should occur to ensure canola remains in good condition.

## 5 CHEMICAL USE

Prior to using any chemicals on canola ensure they are registered for use on canola. Always read the label and use the chemical in compliance with label rates, withholding periods and recommendations. Acceptance by the market of that chemical should also be checked before use.

Canola should only be handled and stored in facilities that will not lead to contamination of the canola with chemical residues that would cause a violation of regulatory and market tolerances.

Low level MRLs for some chemicals are set in Australia to cater for the unintended presence of low levels that may be present on structures and subsequently transferred to canola. While these MRLs may be in place, it is important that industry practices minimise any potential residues that would cause a violation of regulatory or market tolerances. These MRLs do not permit use of those chemicals on the stored canola or as a structural treatment where canola is to be stored or handled unless specifically stated on the label.

### Fenitrothion

Fenitrothion is an insecticide registered in Australia as a post-harvest treatment for cereal grains and as a structural treatment for control of stored product insects where grains are to be stored. Fenitrothion is registered in certain situations in the field to control plague locusts on growing crops such as cereals.

Fenitrothion is not registered in any situation for use in-field on the canola plant, as a post-harvest treatment of canola or as a structural treatment where canola will subsequently be stored following application of the structural treatment.

### Other Chemicals

Before and following harvest only chemicals registered for use on canola are to be used in compliance with label rates and recommendations on the label. **[R]** Relevant domestic and international regulatory and market tolerances should also be checked before any chemical is applied to the crop or canola seed.

There are a number of chemicals other than fenitrothion registered for use on a range of crops:

- In-crop during the growing phase
- As a structural treatment for control of stored product insects
- As a post-harvest treatment of stored grain

Note that even legal application of these insecticides according to the label instructions may transfer residues to the storage structure or handling equipment. If canola is subsequently stored or handled, it may result in the transfer of residues onto the canola that violate domestic and international regulatory and market tolerances.

Use of sorptive dusts such as Dryacide as a structural treatment should be considered prior to storage of canola in any storage facility.

## Flushing or Washing to Minimise Chemical Transfer

Fenitrothion and other chemicals not registered for use on canola should not be used as a structural treatment or for treating handling equipment before storing or handling canola.

If the storage or handling equipment has been previously treated, canola should not be stored or handled until residues have been allowed to degrade sufficiently. Washing and/or flushing should be considered as management tools to potentially reduce residue levels on the storage or handling facilities. Swabbing the storage and handling facilities to check for the presence of pesticide residues should be considered.

Flushing may involve the use of a number of flushes with other consignments of grain through the storage or handling facilities. The grain used to flush the storage or handling equipment should be untreated. Following flushing, the grain could be tested for residues to determine the impact of flushing.

Washing the storage structure and handling facilities with high pressure water may assist in reducing chemical residues. Canola should only be stored or handled through those washed facilities after they have been allowed to dry.

Swab testing of storage structures and handling facilities at regular intervals may provide an indication of chemical residues that are present. Results may assist in determining the effectiveness of the flushing and washing activities.

Further research is required to determine appropriate flushing, washing and swabbing procedures.

## 6 SAMPLING AND TESTING

It is recommended that industry participants implement a fully auditable and recognised Quality Assurance (QA) program and develop internal procedures when storing canola, using handling equipment for canola and when marketing or trading canola. [R]

Essential elements of this QA program or procedures include:

- Awareness of customer requirements and international MRLs
- Awareness of the risks associated with storing and handling canola
- Knowledge of chemical label requirements
- Skilled personnel to apply any chemical treatments
- Personnel trained in correct sampling techniques

It is also recommended that industry implement the following:

- Utilise a sampling and testing methodology with a Limit of Reporting (LOR) at the levels applied by the market. Note these levels of testing may be lower than any routine laboratory testing conducted in Australia and may be below the relevant Australian MRL. Marketers of canola are therefore encouraged to understand MRL requirements of export markets clearly, prior to executing export contracts. Marketers are encouraged to understand their stock export accumulations and logistics clearly, in order to ensure MRLs and international tolerances can be met confidently, prior to executing export contracts.
- Testing of chemical residues on canola prior to outturn to ensure canola is out-turned in compliance with domestic and international regulatory and market tolerances.
- Participation in the National Residue Survey for endpoint testing for all container and bulk canola exports.
- Encourage growers and others in the supply chain to communicate with buyers, marketers and storage agents and advise where incorrect treatments may have occurred, rather than hide the fact an error in application of chemical may have occurred.



## 7 RECORDS

Records of the following should be maintained by the appropriate party for a relevant period of time: [R]

- Company QA system records and Procedures
- Cleaning of storage facilities and the handling, loading and conveying equipment
- Application of any chemical to the canola crop or any storage and handling facilities or application of any fumigant to the stored canola
- Product identification and/or labelling to allow traceability of canola through the supply chain
- Any other relevant information affecting the hygiene or status of the canola

## 8 OCCUPATIONAL HEALTH AND SAFETY

Nothing in this document should prevent industry from complying with all legal requirements and industry practices regarding occupational health and safety.

## 9 PERSONNEL

Operators of all facilities should be trained and knowledgeable in the handling and storage of the crops which are likely to be stored and handled. Operators should be aware of their obligations under employment and safety legislation during the storage, handling and transport of raw materials intended for incorporation into, or direct use as, food and feeding stuffs.

All operators should be made aware of the importance of this document and any subsequent amendments. This applies to personnel within their own company and any service provider, which have the potential to come into contact with canola or canola contact areas.

Growers, owners of canola, marketers and exporters should all be aware of the importance of this document and any subsequent amendments. Those involved in the sales and subsequent exports of canola should be trained and knowledgeable in the marketing of canola to export destinations, and in the logistical and testing constraints of their contract executions.

## 10 FURTHER INFORMATION

Further details on the MRLs that apply to international canola markets can be found at the following website:

<http://www.daff.gov.au/content/output.cfm?ObjectID=D2C48F86-BA1A-11A1-A2200060B0A05743>

Additional information on the Australian registration status of chemicals for international markets may be found at the Australian Oilseeds Federation website:

<http://www.australianoilseeds.com/>