

Fumigation Protocol

A. Purpose

This is a guide for industry to assist adherence to the Insect Resistance Management Strategy for managing insect resistance to grain protection chemicals.

B. Background

Insect resistance to the common grain protectants has been present for several years. Resistance to fumigants such as phosphine is increasing in both frequency and strength. Given the dependence of the grain industry on these chemicals, including the mostly widely used fumigant phosphine, and with suitable replacements unlikely to become available commercially in the short term, it is imperative that the grain industry continue to take action to manage resistance of insects to grain protectants and fumigants.

C. Responsibility

All parties in the Australian grain industry have a responsibility to maintain stored grain insect free. The responsibility is twofold:

1. To maintain the food supply chain and food safety for consignments, and secondly
2. To ensure the long-term sustainability of grain protectant and fumigant chemicals, notably the fumigants phosphine and sulfuryl fluoride, through the strategic adoption and implementation of commercially viable, practical, scientifically based management strategies.

D. Strategies

Industry uses a range of strategies to protect stored grain against insect attack (e.g., grain protectants, aeration, hygiene) and kill insects (generally fumigants such as phosphine).

The Australian Grain Industry Code of Practice for the Management of Grain along the Australian Grain Supply Chain ([Link: here](#)) outlines that for the management of live stored grain insects, industry follows Integrated Pest Management (IPM). An IPM strategy includes:

1. Grain hygiene – pre grain receival cleaning of storages and application of physical treatments (e.g., diatomaceous earth).
2. Application of grain protectants and fumigants where required in compliance with all label directions.
3. Where practicable, use grain protectants, or practices other than chemicals such as controlled atmospheres or physical hygiene in place of fumigants.
4. Limit the number of re-treatments of a grain parcel with the same chemical.
5. Assess the risk of insects arising in a grain parcel and only use grain treatments where required.

GTA members are required to use an IPM to **minimise the over-use of chemicals such as fumigants** to reduce insect resistance. Adherence to this IPM Strategy is mandatory for all GTA members.

E. Supply Chain Impacts

A practical approach to adhering to an IPM Strategy includes:

1. Assess the risk of insect infestation through vigilance and testing. Only apply a grain treatment chemical when necessary.
2. Demand insect free grain – when purchasing grain rather than demanding fumigated grain. Place the onus on the seller to deliver insect free grain.

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3. Always use chemicals as per label requirements and follow all label directions including any withholding period. If you are involved in the use of grain protectants or fumigants, please ensure you understand and comply with all label directions.
4. Pre-plan the requirement to move grain and where possible include long lead times prior to grain outturn or sourcing – don't break fumigation periods to access grain in storage as this and the multiple treatment of the same grain stack may result in an increase in insect resistance.
5. Industry must comply with any Australian government quarantine and pre-shipment treatment for each grain market. Don't just demand fumigated grain. Understand and manage the risk of import country requirements for:
 - a. Chemicals used
 - b. The maximum residue limits; and
 - c. Freedom from live stored grain insects

F. Resources

Resources for grain storage companies and trade participants:

1. GRDC Information Hub <https://storedgrain.com.au/information-hub/>
2. GTA Technical Guideline Document No. 17 Container Packer Manual
https://www.graintrade.org.au/sites/default/files/GTA_Technical_Guidelines/TGD%20No.17%20Container%20Packer%20Manual_May2018.pdf
3. Insect Resistance Management Strategy
https://www.graintrade.org.au/sites/default/files/T_20Chemical%20Resistance%20Management%20Strategy%20-%20June%202017.pdf