

Cost-effective stored grain protection

Insect pests are a major source of damage to stored grain on farms, and contaminated and/or damaged grain can deal savage financial blows to farmers.

For livestock feed there is a loss of protein and palatability, for next year's seed grain there is a reduction in the germination percentage, and with grain for milling and human consumption significant downgrades occur with matching price penalties.



Chris Poletto

Methograin, distributed by Barmac, is a stored grain protectant range designed to offer cost-effective solutions to common grain pests. According to Barmac product technical manager **Chris Poletto**, treatment of uninfested stored grain with Barmac's Methograin grain protectant products makes economical and practical sense for long-term protection and peace of mind.

There has been an increasing trend of storing grain on-farm in Australia but Mr Poletto said there are difficulties in managing insect pests in these storages if they are not able to be sufficiently sealed to allow thorough fumigation to occur.

"Unfortunately this is likely to be the case for a large number of storage sites," he said. "For effective phosphine fumigation and an effective insect disinfestation, a level of 200–300ppm phosphine is required over a 7–10 day period. Leaks can result in a drop in phosphine levels to as low as 3ppm, which is ineffective at killing grain insects and instead can contribute to a more rapid buildup of phosphine resistant insects.

"By using Methograin grain protectant products alternatively with fumigants, or where fumigants cannot be used due to facility and application constraints, a more effective grain insect management strategy can be realised.

"When fumigation is not an option, it is strongly recommended to always practise good shed hygiene, before and after harvest, and clean down harvesting and transport machinery when not in use. Aeration or cooling of grain in storage have also shown to be a deterrent to insect population growth.

"Monitoring for insects from the top and bottom of storages should be undertaken at monthly intervals to determine if and when there might be an insect issue."

Mr Poletto said it is important to remember that all stored grain protectant products in Australia are designed for



application to clean uninfested grain. Grain protectant products cannot be relied on for removing a pre-existing grain insect population but instead are designed to prevent infestations developing in stored grain.

"Treatment with grain protectants is therefore recommended at an early stage of grain storage to ensure the grain remains clean and protected," he said.

"Importantly, it is good practice to use at least two modes of action protectants in grain treatments in order to prevent infestations by and development of resistant insect populations. It is for this reason that the Methograin range is based on two active constituents."

Methograin IGR Grain Protection Pack contains two products, Methograin IGR grain protectant (30 g/L (S)-methoprene) in a 1L pack and Methograin Fenitrothion 1000 insecticide in a 300mL pack. This powerful combination pack provides two modes of action and effectively treats 50 tonnes of grain to provide broad spectrum protection from a wide range of grain pests.

Methograin IGR 300 grain protectant is a highly concentrated (S)-methoprene formulation. As little as 100mL of concentrate is enough to treat 50 tonnes of grain for up to nine months' protection. This insect growth regulator product can be combined with other mode of action grain protectants such as fenitrothion, chlorpyrifos-methyl, deltamethrin and spinosad for a more effective protection program.

Methograin Fenitrothion 1000 insecticide can be used to protect stored grain for up to six months. It is a single active and should be combined with another different mode of action grain protectant such (S)-methoprene, and alternated with other grain protectant insecticides as part of a resistance management program. This product can also be applied as a surface structural treatment to grain handling equipment and storage facilities.