



PHOTO: BRAD COLLIS

The case for fenitrothion

Many grain growers would be unaware of the huge effort made by the Australian grains industry to maintain Maximum Residue Limits for chemicals used for grain hygiene in stored grain **By Bill Murray**

Export wheat loading at CBH Kwinana terminal.

IN APRIL 2008 the Codex Committee on Pesticide Residues recommended that the Maximum Residue Limit (MRL) for fenitrothion would be six milligrams per kilogram, a reduction from the existing 10mg/kg, and that the MRL for maize would be deleted. The MRL for unprocessed wheat bran was raised from 20mg/kg to 25mg/kg. This news was received by the Australian grains industry with enthusiasm, as there had been a strong possibility that the international MRL for fenitrothion would be deleted. The Australian grains industry, through a GRDC project, was instrumental in achieving this result.

Fenitrothion is a broad-spectrum organophosphorus insecticide that is widely used in the eastern states of Australia as a grain protectant on stored cereal grains and as a storage structural treatment throughout Australia. It is the preferred organophosphorus treatment for malting barley, and it is also used in association with wheat.

The maintenance of an international MRL for fenitrothion was an exceptionally good outcome for all who store grain post-harvest, both on-farm and in bulk storage, and for maintaining market access. Fenitrothion has had an international Codex MRL for many years, and losing that status would have had significant ramifications, particularly with those

Australian markets that default to Codex MRL. Additionally, many important markets, such as Japan, which have fenitrothion MRLs in their own legislation, would reconsider their own position if Codex had decided to delete its international MRLs.

The process of supporting a chemical at Codex is extremely complex, and the Codex Review procedure is very thorough and precise and requires the input of detailed information about the chemical.

The fenitrothion Codex MRLs for cereal grains were almost deleted in 2002, but an intervention from the Australian delegation ensured their maintenance until consideration could be given by the manufacturer about its support for the chemical.

Manufacturer's support was provided in 2003, and this set in train a series of events leading to the current 2008 recommendation to keep the MRL for cereal grains in place at a reduced rate.

In 2004 additional new data had to be supplied for residues in meat and milk, and information was also required to ensure that dietary intake calculations met the required Codex standards. Despite the provision of this information, the chemical was scheduled for further toxicological and residue review in 2007.

Complex calculations were submitted in 2007 to demonstrate that acceptable dietary intake requirements

were met, based on the representative 13 cluster diets utilised by Codex as a global dietary intake benchmark.

From 2002 through to 2008 there was a need for direct, ongoing consultation with the manufacturer, the generation of additional information, the need for industry consultation through the National Working Party on Grain Protection (NWPGP), and coordination of national grains industry meetings to determine responses to issues.

This coordination and representation on the Australian Delegation to Codex was undertaken through the GRDC project 'Coordination of Regulation of Grain Storage Chemicals'. There was extensive input into the process by the NWPGP and a range of grains organisations which were concerned that the international MRL might be lost.

It is extremely difficult to establish MRLs and it is most important to ensure that they are not lost through lack of support. The post-harvest grain-storage sector has determined, through ongoing industry consultation, that it will not apply grain protectants and fumigants to stored grains destined for export unless those chemicals have international MRLs established through the Codex process.

Dr Raj Bhula, of the Australian Pesticides and Veterinary Medicines Authority, played a most important role in assisting the grains industry in this matter, as she has done with previous Codex issues. Dr Janis Baines, of Food Standards Australia New Zealand, provided dietary intake support; Kevin Healy, of the National Residue Survey, supplied residue monitoring data; and GrainCorp's Phillip Clamp and Matt Head made a major contribution on behalf of the NWPGP. These participants and the Australian delegation to the Codex Committee on Pesticide Residues, led by Ian Reichstein, of the Department of Agriculture, Fisheries and Forestry, provided essential elements that helped achieve the successful result in 2008.

It is essential that all users of fenitrothion and other grain-storage chemicals understand that it is extremely important to ensure that chemical residues are within national and international levels and below levels established in particular markets. Pesticide residue violations in the international marketplace can cause severe market disruption, financial penalties, loss of commodity reputation and even loss of a specific market.

Irresponsible use resulting in residues above MRLs, or above market contract requirements, would quickly make the hard work of the delegation worthless and again put pressure on the ability of the Australian grains industry to deliver hygienic grain to the market. □

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An integrated approach to grain hygiene research

The addition of the Post-Harvest Grain Integrity program to the CRC for National Plant Biosecurity strengthens Australia's ability to ensure market access is maintained

BIOSECURITY IS A two-way street. In one direction there is the importation of pests and pathogens that threaten Australia's agricultural and horticultural industries; in the other direction there is the export of pests and pathogens that can limit market access. However, the terms import and export are not limited to international borders, as issues of biosecurity relate equally to the movement of grain between farms, stores and domestic markets.

The Cooperative Research Centre for National Plant Biosecurity (CRCNPB) is the central coordinating body for plant biosecurity research across all Australian states and territories. Established in 2005, this CRC brings together partners from research, government, education and industry to provide a non-competitive platform for the development and delivery of solutions in the field of plant biosecurity.

In 2007, following an approach from the GRDC and three key players in grain storage and handling, ABB Grain, CBH and GrainCorp, the Post-Harvest Grain Integrity program was established.

"The grains industry felt a new model was needed for managing grain hygiene and saw the CRCNPB already had participation from the key research organisations involved in this area," says Dr Simon McKirdy, chief executive officer of the CRCNPB.

Dr McKirdy believes the integration of the existing partners with commercial players who work across the value chain is good for the development, delivery and adoption of biosecurity solutions, as well as for maintaining market access.

"This integrated approach helps Australia maintain its clean, green image and meet this market expectation," he says. "It also means investment in stored-grain research has doubled. We have the largest budget that has ever been available to work on stored-grain hygiene challenges, from the farm gate to the market."

The increasing resistance to phosphine in stored-grain pests and the potential loss of this cost-effective,



PHOTO: CRCNPB

Dr Simon McKirdy, CEO of the CRC National Plant Biosecurity: integrating work on stored-grain hygiene challenges into the CRC has enabled investment in this area to be doubled.

THE INCREASING RESISTANCE TO PHOSPHINE IS THE GREATEST THREAT TO GRAIN HYGIENE THAT THE INDUSTRY FACES