Keeping the bugs at bay

ENSURING AUSTRALIAN GRAIN IS SHIPPED FREE OF INSECT CONTAMINATION HAS BEEN A CHALLENGE FOR DECADES. WHILE SCIENCE HAS JUST MANAGED TO KEEP A STEP AHEAD, THE JOB IS NOT GETTING ANY EASIER. BERNIE REPPEL OPENS THIS SPECIAL SUPPLEMENT WITH A REPORT ON RESIDUE LIMITS AND RESISTANCE TO PHOSPHINE

THE INDUSTRY GROUPS responsible for handling and trading Australia's grain see the spread of insect resistance to currently used grain fumigants and protectants as a key issue for the Australian grains industry.

While international grain marketers are being asked increasingly for assurances that grain meets food safety requirements, resistance to grain fumigants like phosphine is threatening Australia's ability to provide the high-quality, residue-free grain that meets market demand.

David Kenn, from AWB Limited's Quality Assurance and Food Safety Department, says the industry is worried about insect resistance to all commonly used chemicals, but particularly phosphine. "It is imperative that we maintain the effectiveness of phosphine to continue to supply our residue-free markets" he says. "Already the loss of effectiveness has reportedly resulted in more re-fumigation being required in storage, with an increase in reports of grain storage sites 'failing fumigation' or being returned to fumigation after short periods.

"While we cannot be sure if all of these incidents are related to procedural or facility issues rather than resistance, such incidents can disrupt industry operations."

Mr Kenn emphasises that grain must be insect-free and that procedures comply with the required withholding and ventilation periods during which grain that has been fumigated cannot be out-loaded. If access to grain is denied, operators may have to bear the cost of making urgent alternative supply arrangements.

Mr Kenn says on-farm storages have a critical role to play in working with the whole-of-industry to help maintain the effectiveness of grain fumigants like phosphine. He points out that increasing enquiries from the market place about GMOs, mycotoxins, chemicals and extraneous material, including toxic weed seeds, means that more customers are requesting QA certification, with consumer concerns continuing to push back down the supply chain.

David Kenn: "It is imperative that we maintain the effectiveness of phosphine to continue to supply our residue-free markets."

Phosphine is one product that if used correctly leaves no residue and so maintaining its effectiveness is of increasing importance.

Japan, for example, has introduced several new chemical residue limits for wheat imports and the Japanese chemicals list for wheat is due to be revised by 2006. The number of chemical MRLs (maximum residue limit) that imported wheat would have to comply with could increase significantly. Mr Kenn says Japan has always set very high compliance demands and in many ways is setting the benchmark.

A growing major issue in Japan is traceability back to growers' paddocks. The European Union has introduced traceability legislation, and the next step could be towards supply chain traceability back to source.

"To achieve full traceability there are obvious co-mingling problems associated with bulk storage of grain, and on-farm storage may prove more effective in providing the necessary level of traceability to meet niche markets," says Mr Kenn. "This would most likely require on-farm QA systems, the use of which has been limited in Australia to date."