

New fumigation technology

In Australia, researchers at CSIRO's Stored Grain Research Laboratory (SGRL), have studied the use of carbonyl sulphide (COS) as a fumigant for durable commodities and structures. COS is effective on a wide range of pests, including the common stored product species, at reasonable concentrations and exposure times. Practical field trials on wheat, oats, barley, canola and field peas have been conducted in 50 t silo bins.

Results have not indicated any actual or potential problems with regard to large-scale use of COS. On the other hand, they have shown that safe and effective fumigation is possible within the competency of a skilled fumigator.

SGRL is re-evaluating ethyl formate (EtF) as an alternative to methyl bromide for use against stored product insects. EtF, a registered food additive, is a fast-acting fumigant that is routinely used on dried fruits in various parts of the world. The volatile fluid, at ambient temperatures, is found naturally in a range of foods at levels of 0.05-1.0 mg/kg. It breaks down on the commodity after fumigation, rather than being desorbed, and the breakdown products are also naturally occurring components. Fumigation with EtF does not adversely affect product quality or seed germination. Efforts are underway to increase the toxicity by raising temperature, relative humidity or carbon dioxide (CO₂) level.

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