

THE USE OF A CYLINDER-BASED FORMULATION OF PHOSPHINE AS A CONTROL STRATEGY FOR FLOOR-STORED GRAIN

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The use of 3% phosphine in carbon dioxide has been investigated as a virtually residue-free method of treating bulk stored grain. Coupled with the strategy of drying and cooling grain after harvest, it offers a safe and efficient alternative to solid phosphide formulations and can remove the need for prophylactic admixture of grain with insecticidal dusts or sprays, provided that insect populations are monitored by an appropriate trapping technique.

The use of continuous gas flows from a cylinder supply is shown to provide a means of sustaining sufficient levels of gas for a long enough period to treat the smaller floor store at low temperatures. In contrast, solid formulations lose efficacy as the size of the store is reduced because of sealing problems, surface area increasing in relation to volume as size decreases.

The cylinder-based mixture also provides a means of using phosphine to treat "hot spots", localised areas of infestation or spoilage, in large bulks, thus saving the cost of a whole bulk treatment. In this capacity the mixture fills a gap left since the withdrawal of liquid fumigants.