

Title Slow generation of phosphine using QuickPHlo-CTM technology.
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Abstract

A slow-release generator, QuickPHlo-CTM, developed to provide a controlled rate of phosphine production, was tested at 10 g/h. This rate was maintained up to 16 days, supplying a relatively constant flow of fumigant in air, to service active fumigation techniques such as SIROFLO. Results of a controlled, phosphine-generation trial are presented. The generator consists of a reactor and related accessories for controlled on-site production of phosphine. Phosphine is produced by the action of water sprayed onto specially formulated blocks of aluminium phosphide and paraffin wax, sized to produce average rates of 5, 10 and 20 g/h phosphine over 16 days. Air is drawn through the reactor to safely displace the generated phosphine into the storage and maintain a uniform effective concentration throughout the fumigation. Safety systems to handle power failure and safe shutdown were tested and are described in this paper.