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FIELD TRIAL OF RECIRCULATION FUMIGATION USING ALUMINIUM PHOSPHIDE TABLETS ON SURFACE OF GRAIN MASS IN LARGE HORIZONTAL WAREHOUSE

J XINA. AND J LI

Zhengzhou Grain Depot of Sino-grain, Zhengzhou, 450066 Henan, P.R. China
E-mail: xing1028@21cn.com

ABSTRACT

A field trial of recirculation fumigation, was carried out by simply placing aluminium phosphide (AlP) tablets on metal trays and spreading these evenly across the surface of the grain. The fumigation was carried out in a new large horizontal warehouse in the Zhengzhou Grain Depot of Sino-grain, Henan, P.R.China. The storage was fitted with gas recirculation equipment and was loaded with 7,600 tonnes of wheat. The basic design consisted of a series of ventilation ducts (500x400 mm^2) under the floor that divide at several bifurcations. The half life time pressure decay (500 Pa to 250 pa) was 48 seconds. The dosage of 1.2 g AIP/m^3 was applied using tablets. The ratio of top level to lowest level of phosphine concentration was above 0.59 during fumigation. Phosphine concentration was maintained at over 70 ml PH_3/m^3 (70ppm) for more than 42 days. Complete control of insects was achieved in this way.