

ABSTRACT

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PHOSPHINE FUMIGATION METHOD AND APPARATUS

An economical, yet effective technique for fumigating grain and other particulate foodstuffs involves the passage through the grain or the like of a carrier gas containing phosphine. The concentration of the phosphine in the carrier gas is within the range of from 4 to 200 micrograms of phosphine per litre. The flow of the gas is at a constant linear velocity within the grain, and the gas leaves the grain mass at a velocity of from 0.5×10^{-4} to about 2×10^{-4} metres per second. In addition, fumigation of grain in a storage facility having a plurality of grain silos (13) is effected from a single source (10) of a gaseous fumigant. The single source of gaseous fumigant is connected to a gas supply duct (11), to which gas inlet ports of the silos are also connected. The connection between each gas inlet port and the duct is provided with a respective valve (14) and a respective orifice plate (15), which is adjusted so that the pressure drop across the plate into the silo is substantially greater than the pressure drop across any other component between the gas source and the silo. With apparatus arranged in this manner, the flow rate of gaseous fumigant through the grain-containing silos in the facility suffers only a minor perturbation when a valve between the duct and a silo is opened or closed. This minor perturbation can be readily compensated by maintaining the gas pressure in the duct at a constant value.

Figure 3 of the drawings should accompany the abstract when published.

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