Title Standardised testing for diatomaceous earth.

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Abstract

A protocol for the evaluation of the efficacy of diatomaceous earth (DE) as grain protectant was developed. Four DE samples as admixture for wheat were evaluated against laboratory-reared cultures of 7- to 21-day-old unsexed adult *Sitophilus oryzae* (rice weevil; CSIRO strain 418) and *Tribolium castaneum* (red flour beetle; CSIRO strain 4). Four different laboratories used this protocol for the evaluation of the DE samples. One laboratory conducted a rapid assessment test that uses physical characteristics to predict insecticidal activity. One laboratory tested the DE samples as surface treatments applied both as a dust and as a slurry. In general, there was good agreement between laboratories, although one laboratory had significantly higher mortality than the other. The possible reasons for this are discussed. The efficacy in the grain bioassay was not correlated with the efficacy in the surface bioassay.