

# Small-scale farmer perceptions of diatomaceous earth products as potential stored grain protectants in Zimbabwe

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## Abstract

Farmers repeated prioritisation of the need for improved methods of controlling insect damage to stored commodities in Zimbabwe led to the search for alternative grain protectants to the locally available organophosphate-based pesticides. In field trials the diatomaceous earth (DE) products, Protect-It<sup>®</sup> and Dryacide<sup>®</sup>, gave good protection to threshed maize, sorghum and cowpea from insect attack during eight-months storage, enabling households to increase both their food security and control over grain sales. However the initial trials, although on-farm, were researcher-managed and only evaluated by farmers at the end of the storage period. No information existed on how effective DEs were under real farmer management.

At the start of the 1999/2000 storage season, farmers in Buhera and Binga districts set up trials in their own granaries using their own maize and sorghum grain respectively. During a seven-month storage period they evaluated the application of 0.1% w/w Protect-It<sup>®</sup> compared to their typical grain protection methods. At five and seven months storage, farmers compared the treatments using the parameters they view as important such as insect damage, expected 'sadza' yield and quality and sale price. The DE treatments outscored other practices for all parameters and farmers were keen to purchase DEs to protect their future harvests. Grain samples from the same trial were also analysed in the laboratory at five and seven months for insect populations, damage and moisture content. Although grain damage and insect numbers were higher in the typical grain protection treatment than the DE treatment, the differences were not statistically significant.