

## **Abstract**

The efficacy and persistence of two commercially available enhanced diatomaceous earth (DE) products (Dryacide, and Protect-It,) against four common tropical storage pests (*Prostephanus truncatus*, *Sitophilus zeamais*, *Callosobruchus maculatus* and *Acanthoscelides obtectus*) were studied when admixed with typical host commodities at different application rates and relative humidities. Persistence of the enhanced DE treatments was considered after 3 and 6 months storage by assessment of both adult mortality and F<sub>1</sub> progeny emergence. Both DEs usually increased parental mortality and reduced progeny emergence of all four insect species in comparison with the untreated control at both 50% and 60% r.h., and at all storage periods. However, efficacy was inversely related to duration of storage and over time the host commodity also became less suitable for insect development. Each insect species differed in its susceptibility to the DE treatments, highlighting the need for field application rates to be based upon the entire spectrum of pest species likely to be present during storage.