Title	Effect of temperature and relative humidity on diatomaceous-earth-treated *Callosobruchus maculatus* (F.) and *Acanthoscelides obtectus* (Say) (Coleoptera: Bruchidae).
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Abstract

Adults of *C. maculatus* and *A. obtectus* were exposed to mung bean and common bean (*Phaseolus vulgaris*) treated with the diatomaceous earth Fossil-Shield at 1020 and 1080 mg/kg, respectively. Diatomaceous-earth-treated bruchids were kept at 20, 25, 30 and 35 deg C with 43, 52, 64, 75 and 84% relative humidity, respectively. The mortality of *C. maculatus* and *A. obtectus* generally increased as the temperature increased but decreased with the increase in relative humidity. The variation between insect mortalities at 25 and 30 deg C under 52-75% relative humidity did not significantly vary. The interaction between temperature and relative humidity had little effect on the mortality of *C. maculatus*, but significantly affected the levels of control of *A. obtectus*. *A. obtectus* was less susceptible to Fossil-Shield than *C. maculatus*. Temperatures between 25 and 30 deg C are physiologically optimum for bruchids, but 35 deg C is close to the maximum tolerable temperature. At 20 deg C, most of the tropical and subtropical stored product insects show reduced activity, so the amount of lethal dust that comes in contact with insects becomes very small.