

## Evaluation of the Entomopathogenic Fungi *Metarhizium anisopliae* and *Beauveria bassiana* against the Red Palm Weevil *Rhynchophorus ferrugineus*

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The red palm weevil (RPW, *Rhynchophorus ferrugineus* (Olivier) (Coleoptera: Curculionidae) is one of the most severe pests of various palm species, including date palms. While examining the susceptibility of RPW to two entomopathogenic fungi, *Metarhizium anisopliae* and *Beauveria bassiana*, strains of the former were found to be more virulent than those of the latter, achieving 100% larval mortality within 6–7 days. The most virulent strains of *M. anisopliae* were then tested on RPW eggs and adults. Incubation in a substrate treated with *M. anisopliae* spores increased egg mortality and reduced their hatchability. The total percentage mortality of eggs and hatched larvae was 80–82%, compared with 34% in the controls. RPW adults were challenged with two types of fungal formulation: dry powder and aqueous suspension. Cumulative adult mortality of 100% was achieved in 2–3 weeks for the dry rice-based formulation and in 4–5 weeks for the spore suspension. As a result of decreased longevity, treated females had a shorter oviposition period and three times lower fertility than the controls. Possible strategies for fungus application are discussed in the light of the high susceptibility of eggs and larvae to fungal infection.

**KEY WORDS:** *Rhynchophorus ferrugineus*; RPW; entomopathogenic fungi; *Metarhizium anisopliae*; *Beauveria bassiana*; date palms.

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Received Nov. 3, 2005; accepted March 2, 2006; <http://www.phytoparasitica.org> posting July 19, 2006.

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