

**EFEKTIVITAS PENULARAN BEBERAPA ISOLAT JAMUR PATOGEN
SERANGGA *Metarhizium anisopliae* OLEH RAYAP PEKERJA**

Coptotermes curvignathus

(Effectiveness of Transmission of Some Isolates of Entomopathogenic Fungus
Metarhizium anisopliae by Subterranean Termite Workers,
Coptotermes curvignathus)

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ABSTRACT

Entomopathogenic fungus *Metarhizium anisopliae* is known as a pathogen of a wide range of insect species, including termite. This insect pathogen is transmitted by its spores. Six isolates of this fungus species have been collected from some locations in Java. Effectiveness of spores transmission of these isolates amongst workers caste of subterranean termite *Coptotermes curvignathus* was evaluated under laboratory trials. Some termite groups containing of infected and uninfected termite workers with fungus spores of these isolates, set up in culture vials filled with moistened sterile sand media, were incubated in a dark and humid at room temperature for 14 days for their contagious effects. Contagious effect was shown by much greater percent mortality of each termite group than number of previously infected termites. Isolates obtained from Research Institute for Estate Crop Biotechnology Bogor (BGR), Faculty of Agriculture, Gadjah Mada University Yogyakarta (UGM) and Institute of Protection of Estate Crops Semarang (SMG) showed highly potential, causing of more than 80% mortality on 50% concentration of infected termites. BGR isolate seemed to be the most effective isolate to be transmitted by termite workers into its colony.

Key words: Entomopathogenous fungus, *M. anisopliae*, *C. curvignathus*, spore contagiousness, termite mortality

ABSTRAK

Jamur patogen serangga *Metarhizium anisopliae* diketahui bersifat patogen terhadap banyak serangga termasuk rayap. Penularan terjadi melalui penyebaran spora. Efektivitas penularan oleh kasta rayap pekerja *Coptotermes curvignathus* yang telah terinfeksi spora jamur dari 6 isolat yang dikumpulkan dari berbagai lokasi di Jawa dievaluasi. Beberapa kelompok rayap yang terdiri dari campuran rayap pekerja yang terinfeksi spora dan yang sehat dimasukkan dalam botol kultur berisi media pasir steril yang lembab, diinkubasi dalam ruang gelap dan lembab pada suhu kamar selama 14 hari. Hasil penelitian menunjukkan bahwa persentase mortalitas rayap cenderung meningkat setelah inkubasi dibandingkan dengan sebelum inkubasi. Isolat dari Balai Penelitian Bioteknologi Perkebunan Bogor (BGR), Fakultas Pertanian Universitas Gajah Mada Yogyakarta (UGM) dan Balai Proteksi Tanaman Perkebunan Semarang (SMG) menunjukkan efektivitas penularan yang tinggi, menyebabkan mortalitas rayap lebih

dari 80% pada 3 perlakuan rayap terinfeksi dengan konsentrasi 50%. Isolat dari Bogor tampaknya paling efektif untuk ditularkan oleh rayap pekerja ke dalam koloninya.

Kata kunci: Jamur patogen serangga, *M. anisopliae*, *C. curvignathus*, penularan spora, mortalitas rayap