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**Control of Subterranean Burrower Bug *Cyrtomenus bergi*  
Froeschner (Hemiptera: Cydnidae) Using Entomopathogenic Fungi  
(Deuteromycotina: Hyphomycetes)**

JULIANA JARAMILLO, CHRISTIAN BORGEMEISTER, HANS-MICHAEL POEHLING

*University of Hannover, Institute of Plant Diseases and Plant Protection, Germany*

**Abstract**

The subterranean burrower bug *Cyrtomenus bergi* Froeschner (Hemiptera: Cydnidae) is a polyphagous pest that feeds on several economic important crops such as cassava, maize and asparagus, causing severe economic losses in regions throughout the neo-tropics, especially in Colombia. So far *C. bergi* has been traditionally managed using synthetic insecticides, though frequent applications are required and these are costly, environmentally hazardous and often fail to reduce damage below injury level. Entomopathogenic fungi can provide an alternative to the use of synthetic insecticides for pest control in the field and greenhouses. Hence, initially screening experiments were conducted in the laboratory using one strain of a *Paecilomyces* sp. and three of *Metarhizium anisopliae* (Metsch.) Sorokin (both Deuteromycotina: Hyphomycetes). Based on these results the effects of combined applications of *M. anisopliae* with a sub lethal dose rate of imidacloprid (1/10 of the recommended dose) on the pathogenicity and mycosis were evaluated under laboratory and greenhouse conditions 5, 10, 15, 20 and 30 days after application (DAA). Under laboratory conditions, in a bioassay using sand, significant differences in terms of mortality were recorded among the combination of the fungus and imidacloprid (88%), the fungus alone (39%), the commercially recommended (52.4%) and the sub lethal dose rates of imidacloprid alone (36.6%) 20 DAA, indicating a synergistic/additive effect between *M. anisopliae* and imidacloprid. In the greenhouse, the same treatments were tested both in sterile and non-sterile soil collected from a highly infested *C. bergi* area in the SW of Colombia. In non-sterile soil, 30 DAA significant differences in burrower bug mortality were found between the fungus/imidacloprid combination (85%) and the other treatments, and also between the fungus alone (41.6%), imidacloprid at the commercial (50.8%) and the sub lethal dose rates alone (31.6%). Likewise in sterile soil, significant differences were found between the fungus/imidacloprid and the fungus alone (88.3% and 70.8%, respectively). However, no significant differences were recorded between the commercial (58.3%) and the sub lethal doses of imidacloprid alone (45%). The potential use of combined applications of entomopathogenic fungi and imidacloprid for small-scale farmers in Colombia to combat burrower bug outbreaks is discussed.

**Keywords:** Burrower bug, Colombia, entomopathogenic fungi, imidacloprid, IPM, subterranean pests