

Occurrence of *Beauveria bassiana* on Sugarcane Root Borer *Emmalocera depressella* Swinhoe

S. EASWARAMOORTHY and G. SANTHALAKSHMI

Sugarcane Breeding Institute, Coimbatore - 641 007

The root borer *Emmalocera depressella* Swinhoe was considered as a minor pest of sugarcane in Bihar, Uttar Pradesh, Haryana, Punjab, northern parts of Gujarat, Maharashtra, Karnataka and Andhra Pradesh (Usman and Puttarudriah, 1955; Avasthy, 1967; Avasthy and Tiwari, 1986). Recently, the pest was observed in Tamil Nadu also. Root borer becomes a serious pest, when the wilt disease of sugarcane also occurs along with it (Jayanthi and David, 1990). During the survey for root borer occurrence in Saraswathi Sugar Mills, Yamunanagar in Haryana, a number of larvae were found to be infected and mummified by a fungal pathogen. The dead larvae became hard and brittle. The body showed pinkish colouration in the initial stages of infection and was covered with a white fluffy fungal mat in the advanced stages. More than 1000 larvae

infected larvae were reared on sugarcane pieces at $25 \pm 1^\circ\text{C}$ and 75 ± 10 per cent relative humidity. Cent per cent mortality occurred in 4 to 7 days. White mycelial growth appeared within a day after the death of the larvae and the cadavers were completely covered by the fungus in two or three days when placed over a moist filter paper.

The effectiveness of the fungus compared to that of other fungal isolates available in the laboratory was tested (Table 1). Maximum mortality was observed in *B. bassiana* (root borer isolate) and *Beauveria* nr. *bassiana* (shoot borer isolate).

This is the first record of *B. bassiana* on root borer. *B. bassiana* was reported earlier on other sugarcane pests like stalk borer, *Chilo auricilius* Ddgn. (Varma and Mitra, 1981) and white grub, *Holotrichia consan-*

Table 1. Pathogenicity of fungal pathogens to root borer

Pathogen (at 10^7 spores/ml)	Original host	% mortality	Incubation period (days)
<i>Beauveria bassiana</i>	Root borer	100	5.3
<i>Beauveria</i> nr. <i>bassiana</i>	Shoot borer	100	7.00
<i>Metarhizium anisopliae</i> var. <i>major</i>	<i>Oryctes rhinoceros</i>	80	7.25
<i>M. anisopliae</i> var. <i>minor</i>	Brown plant hopper	70	8.43

were examined out of which about 10 per cent larvae showed fungal infection.

The fungus was isolated in pure culture on Sabouraud dextrose agar + yeast extract medium and was identified as *Beauveria bassiana* Balsamo (Criv) Vuill. (IMI No. 348041 and 348042). Pathogenicity tests were conducted by spraying third instar field-collected larvae with a spore suspension (10^7 spores/ml) obtained from 10 day-old culture along with a surfactant (Teepol). The in-

guinea Blanch (Rao and Vijayalakshmi, 1959). while *Beauveria* nr. *bassiana* was reported on shoot borer, *Chilo infuscatellus* Snell. (Easwaramoorthy and Santhalakshmi, 1987). Further studies with this fungal pathogen are in progress.

KEY WORDS : *Beauveria bassiana*, Sugar cane root borer, *Emmalocera depressella*

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