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Aulacophora foveicollis, a natural diet to entomopathogenic fungus, *Beauveria bassiana*



P. Vinayaga Moorthi*, C. Balasubramanian

PG and Research Department of Zoology, Thiagarajar College, Madurai, Tamil Nadu, India

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KEYWORDS

Aulacophora foveicollis;
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Bioassay;
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Abstract The red pumpkin beetle (RPB), *Aulacophora foveicollis*, becomes a notable threat to cucurbitaceous family. The present investigation studied the efficiency of *Beauveria bassiana* (B8) isolate against RPB. The results revealed that, they secured lowest lethal concentration (9×10^3) besides stunning growth over treated adult RPB. The gradual increase and dispersal of hyphea from thoracic region of the insect to all over the body was studied clearly in the present investigation. From this study, it was strongly recommended that, the *B. bassiana* would be a promising biocontrol agent and suggested for the field RPB management.

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Introduction

The red pumpkin beetle (RPB), *Aulacophora foveicollis* (Lucas) is a serious pest and causes severe damages to pumpkin, *Cucurbita moschata* Duch. Ex Poir and other cucurbits (Rajak, 2001; Prasad and Kumar, 2002). According to Azim (1966) RPB is the most destructive insect pest of melons and cucumber, the cucurbitaceous vegetables. According to Butani and Jotwani (1984) this insect pest is prevalent all over South-East Asia, Mediterranean region towards the west and Australia in the east. Morphologically, adult is red, oblong and approximately 6–8 mm long and oviposition usually happened at the basal region of the cucumber stem and it was around 300 eggs (Srivastava and Butani, 1998). The adult beetles are a

voracious feeder of leaf lamina, not restricted to it they also attack flowers and cotyledons (Butani and Jotwani, 1984). They eat seedlings, young and tender leaves and flowers. They normally occur in large numbers. Report by Maniruzzaman (1981) states that, the yellowish white grubs of RPB cause root injury through soils. Nayar et al. (1996) reported that red pumpkin beetle made holes on leaves of pumpkin and melon while grubs remained in the soil to feed on root, stem and fruits. Presently the farmers are totally dependent on the use of insecticides to control this pest. Use of insecticides for RPB control has been reported by several workers Alam (1969), Chattopadhyay (1992), Saha (1992). Indiscriminate use of pesticides leads to adverse ill effects such as pest resistance to insecticides, outbreak of secondary pests like RPB, health hazards and cause environmental pollution besides improper management (Hagen and Franz, 1973; Bhaduri et al., 1989; Devi et al., 1986). Das and Ishaque (1999) studied the efficacy of neem products for the control of red pumpkin beetle in Jorhat, India. Of all bio-control offers prominent alternative to the use of the chemical pesticides in agricultural crop protection. Fungal bio-control agents play a major role in

* Corresponding author at: Department of Zoology, Thiagarajar College (Autonomous), Madurai 625 009, Tamil Nadu, India. Mobile: +91 99948 09189.

E-mail address: vinayputhu@gmail.com (P. Vinayaga Moorthi).

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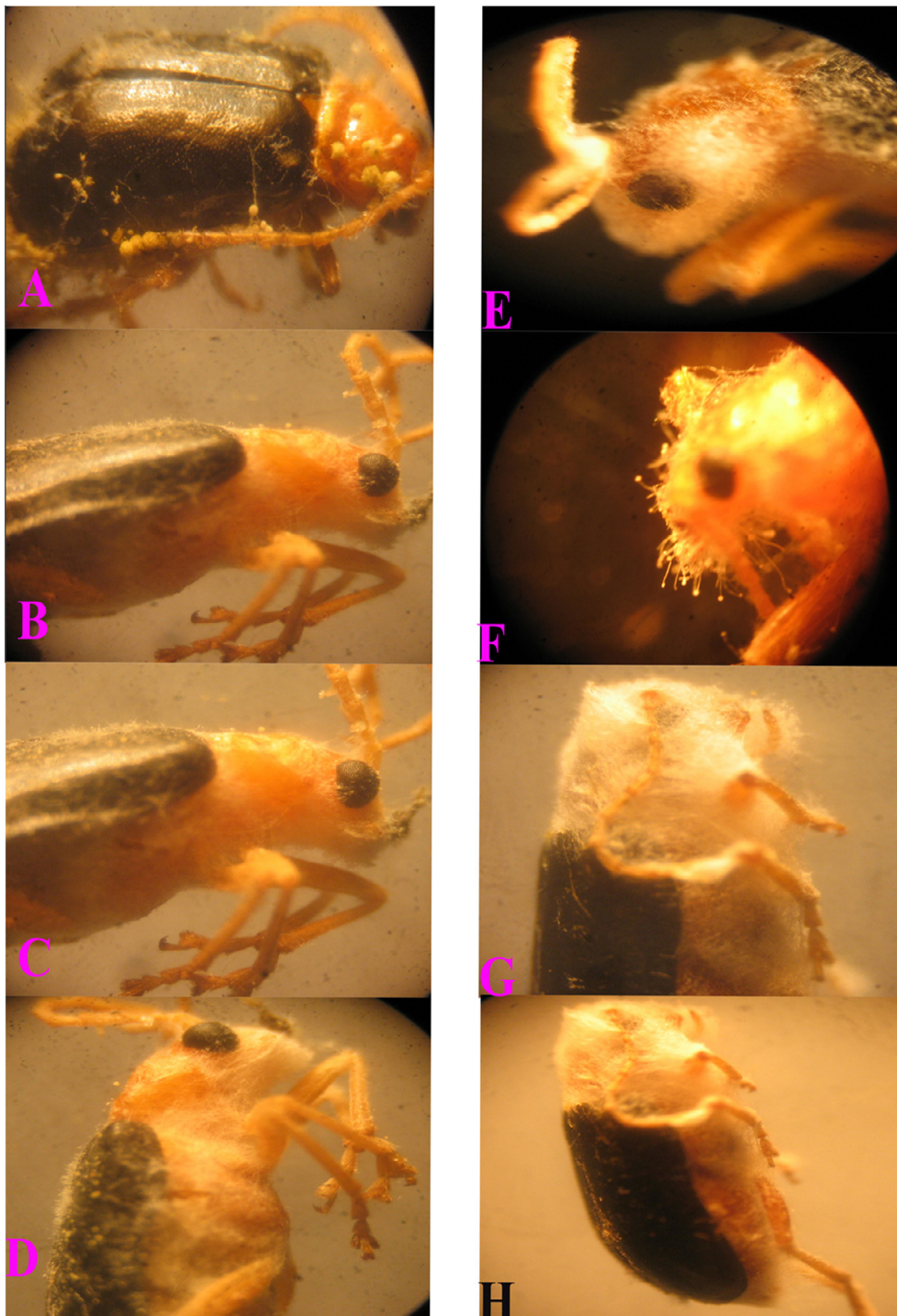
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Table 1 LC₅₀, LC₉₀ value of spore concentrations of *Beauveria bassiana* (B8) against *Aulacophora foveicollis* after 12th day of post inoculation.

Organism	LC ₅₀ (Lower–Upper Limit)	LC ₉₀ (Lower–Upper Limit)	χ^2
<i>Beauveria bassiana</i> (B8)	9×10^3 (6.7×10^4 – 1×10^6)	9×10^8 (6×10^7 – 1×10^{13})	2.025*

* Significant at 0.05%.

**Figure 1** Stages of mycosis by *Beauveria bassiana* (B8) on *Aulacophora foveicollis*. (A) Hyphal growth on antenna; (B), (C), (D) and (E) dispersal of hyphal growth all over the body of *A. foveicollis*; (G) and (H) complete engulfing of *A. foveicollis* by *B. bassiana*.

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