

## **Efficacy of an Entomopathogenic Fungus, *Lecanicillium lecanii* as a Bio-Control Agent against *Bemisia tabaci* on *Hygrophila corymbosa***

L. Jathukula\* and G. Mikunthan

Department of Agricultural Biology, Faculty of Agriculture, University of Jaffna,  
Sri Lanka

\*l.jathu@gmail.com

Whitefly, *Bemisia tabaci* infestation is observed on *Hygrophila corymbosa*, a newly established aquatic plant in Green Farms Ltd., Marawilla, Negombo. This study was carried out to understand the biology of *B. tabaci*, alternative host and the efficacy of *Lecanicillium lecanii* against *B. tabaci*. Eggs, nymphs and adults of *B. tabaci* was reared and studied their development stages and damaging stages. Six life stages of *B. tabaci* are egg, four instars, and the adult. All the life stages of *B. tabaci* occurred on the lower surface of the leaf. Crawler, the first instar had legs and the only mobile instar that moved to feed sites. Nymphs and adults of *B. tabaci* caused infestation on *H. corymbosa*. *Solanum lycopersicum*, *Solanum melongena*, *Capsicum annum*, *Crossandra infundibuliformis*, *Euphorbia pulcherrima* and *Plectranthus scutellarioide* and those identified as alternative hosts for *B. tabaci*. Under *in-vitro* conditions the *L. lecanii* formulation was used to control *B. tabaci*. All the experiments were designed according to complete randomized design (CRD). Data were statistically analyzed using the SAS package. Significance among the treatments was determined according to Dunnett mean separation test at 95% of a confidence interval. Application of *L. lecanii* suspensions at 1 g/L, 3 g/L, 6 g/L and 10 g/L against *B. tabaci* nymphal stage resulted in 88%, 97%, 97% and 98% mean mortality respectively at 15 days after treatment (DAT). The results also revealed that the percentage of mean mortality of eggs was very less at different concentrations of *L. lecanii*. No mortality had been observed until 9 DAT. Mean mortality of *B. tabaci* eggs at 1 g/L, 3 g/L, 6 g/L and 10 g/L of *L. lecanii* suspension were 8%, 12%, 12%, and 15% respectively at 15 DAT. Application of *L. lecanii* suspension at 2 g/L, 3 g/L and 4 g/L against the nymphal stage of *B. tabaci* has resulted in 97%, 99% and 99% of mean mortality, respectively at 15 DAT. Hence, 3 g/L of *L. lecanii* was the optimum concentration to control *B. tabaci* nymphs under *in-vitro* conditions.

**Keywords:** *Bemisia tabaci*, Bio-control, *Hygrophila corymbosa*, *Lecanicillium lecanii*