

A review of the biology and control of Whitefly, *Bemisia tabaci* (Hemiptera: Aleyrodidae), with special reference to biological control using entomopathogenic fungi

ABSTRACT

Whitefly, *Bemisia tabaci* (Gennadius) (Hemiptera: Aleyrodidae), consists of genetically diverse species known to cause significant destruction in several crops around the world. Nymphs and adults of *B. tabaci* cause damage to plants during feeding, and they can act as a virus vector, thus causing significant yield loss to crops in the tropical and subtropical regions. Chemical pesticides are widely used to control *B. tabaci* due to their immediate action, but this approach has several drawbacks including food safety issues, insecticide resistance, environmental pollution, and the effect on non-target organisms. A biological control agent using entomopathogenic fungi (EPF) has therefore been developed as an alternative against the conventional use of chemical pesticides in an integrated pest management (IPM) system to effectively control *B. tabaci*. It is apparent from this review that species of hyphomycetes fungi are the most common EPF used to effectively control *B. tabaci*, with the second instar being the most susceptible stage of infection. Therefore, this review article focuses specifically on the control of *B. tabaci* with special emphasis on the use of EPF as biological control agents and their integration in IPM.

Keyword: Biological control; *Bemisia tabaci*; Entomopathogenic fungi; Host plant; Whitefly