

RESEARCH PAPER

# Bioefficacy of mycopathogens *Verticillium lecanii* Zimmermen and *Metarhizium anisopliae* Metchnikoff against sucking pests of Bt cotton

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**Article Info** : Received : 31.07.2015; Revised : 21.08.2015; Accepted : 07.09.2015

Entomopathogenic fungi *Verticillium lecanii* Zimmermen and *Metarhizium anisopliae* Metchnikoff have generated a great deal of interest in recent years because of their potential as bio-control component in integrated pest management of cotton. These two mycopathogens were evaluated against sucking pests of Bt cotton during *Kharif* 2011 and 2012 at Cotton Improvement Project, Mahatma Phule Krishi Vidyapeeth, Rahuri to find out the scope and potentiality of *V.lecanii* and *M.anisopliae* against sucking pests of Bt cotton in intra hirsutum Bt hybrid (RCH- 2Bt). Mycopathogens *V.lecanii* ( $2 \times 10^8$  cfu/gm and  $2 \times 10^{12}$ cfu/g) and *M.anisopliae* @ 2000 g/hectare were evaluated alone and in combination (*V.lecanii* + *M.anisopliae*). The observations were recorded on 3,5 and 10 days interval after each spray application. Pooled analysis of two years data revealed that *V.lecanii* ( $2 \times 10^{12}$ cfu/g) @ 2000 g/hectare + *M.anisopliae* ( $2 \times 10^{12}$ cfu/g) @ 2000 g/ha in combination was found more effective and significantly superior to its lower dose *V.lecanii* ( $2 \times 10^8$  cfu/g)@ 2000 g/ha + *M.anisopliae* ( $2 \times 10^8$  cfu/g) @ 2000 g/ha. It was proved superior over all other treatments in reducing aphids, jassids, thrips and whitefly population, however, it was at par with *V.lecanii* ( $2 \times 10^{12}$ cfu/g) @ 2000 g/ha. Thus, *V.lecanii* ( $2 \times 10^{12}$ cfu/g) @ 2000 g/ha was found to be the effective dose against all major sucking pests of cotton. Investigation on evaluation of entomopathogenic fungi against natural enemies of sucking pests in Bt cotton revealed that there was no significant adverse impact of *V. lecanii* and *M. anisopliae* on the activity of natural enemies *viz.*, Chrysoperla and Coccinellids; when compared with the population of natural enemies in control. Sole and combine application of *V. lecanii* and *M.anisopliae* at all the evaluated doses were not found toxic to natural enemies.

**Key words** : Bt cotton, *Kharif*, Sucking pests, Mycopathogen, Entomopathogenic fungi *Verticillium lecanii*, *Metarhizium anisopliae*

**How to cite this paper** : Hole, U.B., Gangurde, S.M., Sarode, N.D. and Bharud, R.W. (2015). Bioefficacy of mycopathogens *Verticillium lecanii* Zimmermen and *Metarhizium anisopliae* Metchnikoff against sucking pests of Bt Cotton. *Asian J. Bio. Sci.*, **10** (2) : 138-142.