
Title: Implantation of *Heterorhabditis indica*-infected *Galleria* cadavers in soil for biocontrol of white grub infestation in sugarcane fields of Western Uttar Pradesh

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ABSTRACT

Over the past 10 years, the farmers of Uttaranchal and Western Uttar Pradesh have been fighting a losing battle against the white grub (Coleoptera: Scarabaeidae) infestation of the sugarcane crop. Pesticides have failed to address the problem as evident from the observed infestation levels of 10–24 grubs/m². During 2008–14, the Division of Nematology, IARI launched a biocontrol project involving treatment of the white grub afflicted fields with entomopathogenic nematodes (EPN)-infected *Galleria mellonella* cadavers. This initiative, spread over the districts of Ghaziabad, Meerut, Amroha, Saharanpur, Gajraula, Bulandshahar and Hapur, was undertaken in collaboration with the non-governmental organization (NGO)—The Foundation for Resources Management and Environmental Remediation (FARMER) and the local sugar mills, and by enlisting the active participation of the farming community. It was perceived that this technology had a greater possibility of evolving into a long-term, sustainable biocontrol strategy if the EPN-infected *Galleria* were sourced in each village. Capacity-building programmes were undertaken in the villages with especial focus on empowering women and small and marginalized farmers by educating them on rearing and infecting *Galleria*. This initiative has resulted in an average reduction of 69.1% in the white grub population and an average increase of 60.49 quintals/acre in sugarcane yield over untreated control.

KEY WORDS

Heterorhabditis indica, *Galleria mellonella* cadavers, White Grubs, Sugarcane