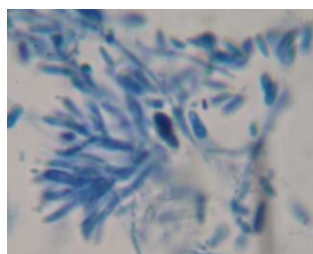


Shatpada Grubicide- *Metarhizium anisopliae* for management of white grubs infesting Sugarcane

- **Brand Name:** Shatpada Grubicide
- **Microbial Constituent:** *Metarhizium anisopliae* ICAR-NBAIR Ma 4 strain
- **Microbial Culture deposition in National Culture Collection and accession number:** Yes, deposited at ICAR-NBAIM, Mau. Accession No. NAIMCC-F-01296. DNA finger print generated at ICAR-NBAIM, Mau.
- **Production method:** Talc formulation (2% WP) containing minimum of 1×10^8 cfu/g
- **Target pest and crop:** White grubs (*Holotrichia* spp.) in Sugarcane
- **Method of application:** Soil application of *M. anisopliae* enriched Farmyard manure twice a year. Water not required. 500kg of FYM required per hectare per year.
- **Dosage of application:** Soil application of 2.5 kg of Shatpada Grubicide mixed with 250kg Farmyard manure per hectare (2.5×10^{11} spores/hectare). The application has to done twice a year during June/July & July/August.
- **Target states:** Karnataka, Andhra Pradesh & Maharashtra
- **Validation:** The technology was tested at two AICRP-Biocontrol centres at UAS-Raichur, Karnataka during 2016-17 & 2017-18 and RARS, ANGRAU, Anapalli, Andhra Pradesh during 2015-16 & 2016-17.



Effect of *M. anisopliae* (NBAIR-Ma-4) on Sugarcane (Var. CO-86032) white grub pests at Raichur, Karnataka during 2017-18



Spores of *Metarhizium anisopliae*



M. anisopliae infected white grub cadaver



NBAIR Ma 4 treated plot



Untreated Control Plot

Effect of NBAIR Ma-4 on white grubs in Sugarcane

- **Benefits:**
75-96% pest reduction
33-62% increase in yield
- **Commercialization of technology:** The technology was sold to 4 private companies during 2020 & 2021 for CIBRC Registration and subsequent commercial production.

Contact: Director, ICAR- National Bureau of Agricultural Insect Resources, Bangalore-560 024.
director.nbair@icar.gov.in