**Bioformulation of indigenous entomopathogenic fungi of Assam for control of mustard aphid (*Lipaphis erysinbi* Holt)**

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**Executive Summary of the Project (2013NE01)**

Twelve fungal isolates of 8 genera such as *Acremonium breve*, *Acremonium cellulolyticus*, *Aspergillus fumigates*, *Aspergillus niger*, *Aspergillus tamarii*, *Beauveria bassiana*, *Fusarium culmorum*, *Metarhizium anisopliae*, *Nomuraea releyi*, *Penicillium chrysogenum*, *Penicillum pinophilum* and *Verticillium lecanii* were isolated from mycosed cadavers of mustard aphids, soil sample on agar plate and insect baiting methods. The strains were identified using ITS 1-4 region DNA sequence alignment tools.

Anlaysis of the virulence heatmap of 12 fungal strains against target pest (Mustard aphid), predators (lady Bird Beetle) and pollinator (honey bee) were carried out in laboratory bioassays @ 1 x 108 CFU for 3 & 7 days. The heatmap revealed two most efficient fungal strains *Penicillium pinophylum* (within 3 days) followed by *Acremonium cellulyticus* as bioagent with least incubation *period* (within 7days) against target pest (mustard aphid) without any harmful effect on predators and pollinators. FTIR spectral study reveal the presence of unique PO-H symmetrical stretching of *Penicillium pinophilum* strain at 2350 cm-1 which might have impact on higher virulence of the species.