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Secondary Metabolites of Entomopathogenic Microbes to Control Lepidopteran Pests

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Global crop losses due to *Helicoverpa armigera* have been estimated to be over US \$ 2 billion annually whereas 80% of this loss occurs in India causing wide spread misery to the farmers who face the risk of frequent crop failures. Secondary metabolites from microbes, particularly bacteria and actinomycetes, are known to kill various insects including *H. armigera*. Spinosad extracted from soil actinomycetes *Sachharopolyspora spinosa* caused significant effect on *H. armigera*.

At present, International Crops Research Institute for the Semi-arid Tropics (ICRISAT) has focussed to identify spinosad like compounds that can kill this pest from its 1500 strong microbial germplasm. A total of 111 entomopathogenic microbes were screened, out of which 16 were found to be potential against three major lepidopteran pests, *H. armigera*, *Spodoptera litura* *Chilo partellus*. culture filtrate extracts and biomass of actively growing microbial cultures were used against the early instars of lepidopteran pests on artificial semi-synthetic diet. Secondary metabolites of the most potential strains will be purified by solvent partitioning, solid phase extraction (SPE), silica gel thin layer chromatography, open column chromatography and High performance Liquid Chromatography (HPLC). The active compounds will be identified by mass spectrometry and NMR studies. The results will be discussed at the time of presentation.