Field evaluation of indigenous *Spodoptera frugiperda* nucleopolyhedrovirus NBAIR1 for the management of maize fall armyworm in India

Sivakumar Gopalsamy[1,*], Ram Kumar Pandi[1], Mohan Muthugounder[1], Venkatesan Thiruvengadam[1], Kannan Malaichamy[2], Kandan Aravindaram[1], Manjunatha Channappa[1], Rangeshwaran Rajagopal[1], Subaharan Kesavan[1] and Sushil Satya Nand[1]

[1]ICAR-National Bureau of Agricultural Insect Resources, Bengaluru 560 024, India
[2]Department of Agricultural Entomology, Tamil Nadu Agricultural University, Coimbatore 641 003, India

The bioefficacy of an indigenous *Spodoptera frugiperda* nucleopolyhedrovirus (SpfrNPV) National Bureau of Agricultural Insect Resources 1 (NBAIR1) infecting maize fall armyworm (FAW) was evaluated under field conditions. In 2019, FAW infestation on maize was less after two sprays of emamectin benzoate (19.04%) followed by *S. frugiperda* nucleopolyhedrovirus ICAR-NBAIR1 (21.90%) and control (80.00%). In 2020, FAW infestation on maize was less after two sprays of emamectin benzoate (16.19%) followed by *S. frugiperda* nucleopolyhedrovirus ICAR-NBAIR1 (19.04%) and untreated control (69.52%). Field trial results revealed that there was 72.6% reduction in FAW infestation and 57.6% increase in the grain yield from the SpfrNPV NBAIR1-treated plots during 2019 and 2020. It is concluded that SpfrNPV NBAIR1 is a potential isolate to manage the FAW infestation.

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especially microbial pesticides, are environmentally safe, ecologically acceptable and highly effective against target insect pests and are safe against natural enemies of crop pests[4]. Microbial insecticides can be equally effective as chemical insecticides in managing insect pests[5]. Natural occurrences of native entomopathogens on FAW larvae, *Metarhizium rileyi*, nucleopolyhedrovirus and *Bacillus thuringiensis* (*Bt*) from the maize-growing villages of India were reported[3]. Application of microbial pathogens, *M. rileyi*, *M. anisopliae*, *Beauveria bassiana*, *B. thuringiensis* and nucleopolyhedrovirus for managing FAW are pracised in different parts of the world[6]. *S. frugiperda* nucleopolyhedrovirus (SpfrNPV) belongs to the family Baculoviridae and has been well-recognized as an alternative strategy for managing maize FAW effectively and in an environmentally safe manner. Baculoviruses mainly nucleopolyhedroviruses (NPVs) and granuloviruses (GVs), are microbial pesticides widely used as microbial insecticides of insect pests[5,7] and