

RESEARCH ARTICLE

Evaluation of bio-inoculants for ecofriendly management of major pests of mung bean (*Vigna radiata* L.)

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ABSTRACT

Field trial was conducted during two *Kharif* consecutive seasons 2008 and 2009 for testing the bioefficacy of bio-inoculants against major pests of mung bean at research farm of Centre of Excellence for Research on Pulses, S. D. Agricultural University, Sardarkrushinagar. Based on pooled results, seed treatment of imidacloprid (5 g/kg seeds) and foliar spray of profenophos (2 ml/lit.) were found effective against leafhopper and *Maruca vitrata*. Use of microbial bioinoculants can substitute the conventional pesticide use in short duration crops like mungbean and it reduces the pesticidal hazards. However, significant effect was also observed in the bioinoculants applied plots on the sucking insects and pod damage by *Maruca vitrata*. *Pseudomonas fluorescens* (10 g/kg seeds) seed treated plots and spraying of profenophos (2 ml/lit.) at 50 per cent flowering was found effective against leafhopper and *Maruca* as well as in achieving higher yield of mung bean.

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INTRODUCTION

Mung bean (*Vigna radiata* (L.) is one of the most important staple legume foods containing about 25 per cent protein, which is almost three times that of cereals. In addition to being an important source of human food and animal feed, it also plays an important role in sustaining soil fertility by improving soil physical properties and fixing atmospheric nitrogen. It is also drought resistant crop and suitable for dry land farming and predominantly used as an intercrop with other crop. Among the various insects pests, podborers like *Maruca vitrata* (Geyer) are the serious pest causing divert damage to buds, flowers and pods of green gram. It has been estimated that nearly 30% damage is caused by this pest (Sontakee and Mudali, 1990).

The sucking insect pests *viz.*, leaf hopper, thrips, aphid and whitefly the are major pests limiting profitable cultivation of green gram in Gujarat state. Among the sucking pests, the nymphs and adults of leaf hopper suck the cell sap from

underside of the leaves and inject their toxic saliva into the tissue causing toxemia. In case of heavy infestation, field is adversely affected (Singh and Van Emden, 1979).

The health conscious and environmental friendly people are bending more towards organic concepts of farming. In this scenario, microbial insecticides such as entomopathogenic fungi can provide an alternative, more environmentally friendly option to control this insect pest. Spraying of chemical insecticides prove to be costlier and environmentally and health hazardous in small duration pulse crop (Soundarajan and Chitra, 2011). Hence, seed treatment is one of the easy, economic and feasible methods for pest management. The present study was initiated keeping the above points in view and thereby to evaluate the efficacy of bio inoculants and some synthetic insecticides in mung bean.

MATERIALS AND METHODS

The field trial was conducted at the research farm of