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Integrated management of gram pod borer, *Helicoverpa armigera* (Hubner)

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ABSTRACT

The experiment on integrated management of *H. armigera* infesting chickpea was conducted during *Rabi* season of 2008-2009 at the Instructional Farm of Karmaveer Kakasaheb Wagh College of Agriculture, Nashik on two varieties *viz*., Digvijay and Vihar with the main object to demonstrate farmers regarding the impact of IPM strategy in management of the pest.. It was observed that the average incidence of *H. armigera* in IPM block was 9.30 and 9.60 per cent as against 16.50 and 15.45 per cent in conventional method (chemiacal control) block in the varieties Vihar and Digvijay, respectively, which indicated that there was 43.63 and 37.86 per cent reduction in pest incidence in the respective varieties due to adoption of IPM strategy. Similarly, there was 39.27 and 34.68 per cent increase in yield in IPM block as compared to conventional method block of the respective varieties. The gross monetary returns were to the tune of Rs.42900/- and Rs.38940/- per hectare in case of IPM block as compared to Rs.31920/- and Rs.27960/- in conventional method of pest control in the varieties Vihar and Digvijay, respectively. The net monetary returns were Rs.39562/- and Rs.35299/- in IPM block as against Rs.29284/- and Rs.25187/- in conventional block in the respective varieties. Thus, there was net benefit of Rs.10278/- and Rs.10112/- in the Vihar and Digvijay varieties of gram due to adoption of IPM strategies. However, there was negligible increase in C:B ratio in IPM as compared to conventional method taking into consideration of plant protection inputs only due to the addition expenditure in IPM block.

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Key words : *Sclerotium rolfsii*, Groundnut, Association analysis, Superior segregants

INTRODUCTION

Helicoverpa armigera (Hubner) is commonly referred as gram pod borer, American bollworm, tomato fruit borer, etc. according to the crop it infests. It has global distribution, widely distributed in Europe, Africa, Asia and South Pacific regions (Reed and Pawar ,1982). It is highly polyphagous pest causing damage to the various groups of crops over 360 plant species including the crop plants like cotton, maize, sorghum, sunflower, tomato, okra and legumes etc. (Singh and Singh,1975). On an average 30 per cent losses in yield of gram have been reported . It has been estimated that a single caterpillar destroys 30-40 pods of gram in its life time. In severe infestation, damage may be caused from 20 to 50 per cent (Singh, 2010).

Indiscriminate pesticide use for the control of this pest on various crops has led to resurgence and resistance problems apart from the other harmful effects on the environment, hence, there is a need for eco-friendly options like biocontrol, integrated pest management (IPM), etc. This paper provides a case study of current research initiative focused on the demonstration for management of *H. armigera* in chickpea through the use of eco-friendly methods with the main object to demonstrate the students of the college and visiting farmers regarding the impact of IPM strategy in management of the pest.

MATERIALS AND METHODS

The experiment on integrated management of *H. armigera* infesting chickpea was conducted during *Rabi* season of 2008-2009 at the Instructional Farm of Karmaveer Kakasaheb Wagh College of Agriculture, Nashik (M.S.) on two varieties *viz*., Digvijay and Vihar comprising of 1200 m^2 block with IPM and conventional (chemical) method of pest control separately with proper isolation from each other comprising of following strategy.

IPM block :

– Sowing of sorghum seed (cv. M.35-1) @ 100g/ ha.(mix crop) as live bird perchers.

– Providing wooden cross sticks @ 50/ha. as bird perchers.

– Use of pheromone traps (Helilures) right from 15 days after germination, replacing the lures after every 21 days up to harvest of the crop @ 10/ha.

– Timely collection and destruction of larvae of the pest.

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