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IMPACT OF IPM APPROACHES AGAINST CHICKPEA POD BORER (*HELICOVERPA ARMIGERA*) AT FARMER'S FIELDS

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ABSTRACT

Impact studies of Integrated Pest Management (IPM) approaches against pod borer in chickpea through FLD were conducted at forty farmer's fields of Sawaimadhopur district under RKVY Project during Rabi 2011–12. The IPM approaches recorded 14.30 per cent less pod damage and resulted in 20.75 per cent higher grain yield over farmer's local practice (13.25q/ha.) with incremental B: C ratio of 7. 70.

Key words: Chickpea, IPM techniques, Pod borer, Farmers field

INTRODUCTION

Chickpea (*Cicer arietinum* L.) is the major rabi pulse crop grown in Rajasthan state and India, but the average yield of chickpea is very low in the state. Though the crop has fewer problems with pests than other legumes, *Helicoverpa armigera Hubner*, the gram pod borer, is a major limiting factor in the productivity of chickpea. This pest has considerable importance causing 50 to 100% pod infestation throughout the country (Bhatnagar *et al.* 1996). It causes severe losses in the Sawaimadhopur district of Rajasthan. The gram pod borer has been reported to have developed resistance to commonly used insecticides (Armes *et al.,* 1992). Lack of knowledge about discrimination between harmful and beneficial insects and extra pesticide load has left the farmer without any effective control measure. Farmers are still less aware about the success and importance of integrated pest management approaches. In view of pesticidal hazards, the problems of pollution, insecticide resistance development and reducing cost of plant protection, the need was felt to introduce IPM approaches in chickpea at farmer's field through front line demonstrations.

MATERIAL AND METHODS

The studies were conducted at Puneta, Gadota, Boli, Badagown Sarwar, Balapura, Vijaynagar and Gadhi village of Distt. Sawai madhopur during 2011–12. Chickpea is main crop of these villages in rabi season. Considering the interest of farmers group who were ready to adopt IPM approaches in chickpea, Krishi Vigyan Kendra, Sawai madhopur conducted FLD under RKVY Project in chickpea crop on forty selected farmer fields. IPM approaches under demonstration consisted of installation of pheromone traps @ 5 trap/ha for monitoring the incidence of pod borer, hand collection and destruction of egg/larva of *Helicoverpa armigera*, spraying of azadaractin 0.03 EC @ 3ml/litre, application of *Helicoverpa nuclear polihydrosis virus* (HNPV) @ 250 LE/ha for management of pod borer and need based spraying of eco–friendly insecticides on economic threshold level (ETL) basis. In the local practice (control plots), only insecticidal dusting or sprays were taken. Along with the growth observations, yield data were recorded and net return was calculated. The farmers' reaction with respect to acceptance and compatibility of techniques were also recorded.

RESULTS AND DISCUSSION

A perusal of table 1 reveals that the grain yield of chickpea was recorded 20.75 percent higher under IPM approaches over farmers local practice (13.25 q/ha.), which was on account of less pod damage under IPM approaches (10.50%) than farmers local practice (24.80%). IPM approaches and local farmer practice were compared on the economic basis, it was observed that IPM plot showed better results. On an average farmers obtained a yield of 16.0 q/ha. with net return of Rs. 67200/ha with incremental B:C ratio 7.70 under IPM approaches as compared to control plot which provided net return of Rs. 55650/ha.

CONCLUSION

IPM approaches are improved technology which not only reduces the cost of plant protection, but also promises higher yield. IPM approaches also help in reducing the pesticide use and thus delays development of pesticide resistance, reduces residues in soil, water, food and plays important role in the prevention of environmental

Table 1. Impact of IPM approaches against Pod borer, *Helicoverpa armigera Hubner.* at farmer's fields

Component	Percent Pod damage	Grain yield q/ha	Percent increase in yield over F.P	Net return* Rs. /ha	Additional cost of inpu over F.P	Incremental B : C ratio
Farmer's Local Practice (F.P.)	24.80	13.25	–	55650	–	–
IPM approaches	10.50	16.00	20.75	67200	1500	7.70

*Market price of chickpea Rs. 4200/q

imbalance. By the adoption of this IPM approaches, farmers can obtain higher yield of chickpea with better quality and less cost of plant protection.

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