INTERNATIONAL JOURNAL OF PLANT PROTECTION / VOLUME 6 | ISSUE 1 | APRIL, 2013 | 155-158

RESEARCH ARTICLE

Evaluation of chlorantraniliprole (Coragen 20 SC) against maize stem borers

■ M. ANURADHA

Maize Research Centre, Acharya N.G. Ranga Agricultural University, Rajendranagar, HYDERABAD (A.P.) INDIA

ARITCLE INFO

Received : 08.01.2013
Accepted : 14.04.2013

Key Words :
Chlorantriniliprole, Coragen, *Chilo partellus*, *Sesamia inferens*, Dead hearts, *Coccinella* sp., Phytotoxicity

Corresponding author:

ABSTRACT

A field experiment was conducted during *Kharif* 2009 and rabi 2009-10 at Maize Research Centre, Rajendranagar, Hyderabad with the maize hybrid (30V92) in Randomized Block Design with seven treatments for bio-efficacy *i.e.*, coragen 30, 40, 50 and 60 g a.i/ha along with two standard checks, carbaryl 50 WP @ 700 g a.i/ha, endosulfan 35 EC @ 350 g a.i/ha and an untreated control against maize stem borers. Stem borer damage in terms of per cent infestation and per cent dead hearts in four dosages of coragen varied between 1.27 to 2.96 and 0.0 to 0.68 during *Kharif,* 1.06 to 5.60 and 0.0 to 4.31 during *Rabi*. The population of Coccinella spp. remained unaffected.Phytotoxicity symptoms were not noticed on maize crop.

How to view point the article : Anuradha, M. (2013). Evaluation of chlorantraniliprole (Coragen 20 SC) against maize stem borers. *Internat. J. Plant Protec.*, **6**(1) : 155-158.

INTRODUCTION

In India, maize ranks fifth in total area, fourth in production and third in productivity. Among the 250 species of insects and mite species attacking maize in field and storage conditions, spotted stem borer, *Chilo partellus* Swinhoe is the most serious one during *Kharif* causing 26.7-80.4 per cent yield losses in different agro-climatic regions of India (Panwar, 2005). Annual loss of 11.05 crores in *Rabi* is due to the pink borer, *Sesamia inferens* Walker (Siddiqui and Marwaha, 1993). Effectiveness of endosulfan 35 EC spray and whorl application of carbofuran 3G for controlling stem borers was reported by Sajjan (1983). Consequent to the ban of endosulfan, necessity of suggesting alternate chemicals arose. However, no information on new molecules is available. One of the new molecules, Chlorantraniliprole is an anthranilic diamide insecticide with a novel and specific mode of action. It activates ryanodine receptors via stimulation of the release of calcium stores from the sarcoplasmic reticulum of muscle cells causing impaired regulation, paralysis and ultimately death of the sensitive species. It is active on chewing insects primarily by ingestion and secondarily by contact. It has systemic translocation in the plant after soil application and translaminar activity when sprayed. Coragen (Rynaxypyr) has 20 per cent Chlorantraniliprole. Apart from giving long lasting protection (2-3 weeks), it is resistant to photo-degradation, rain fast and harmless to many parasitoids, predators and pollinators. Selectivity to beneficial arthropods makes coragen a strong tool for IPM, where a combination of chemical and biological control techniques is preferred. Reports on the efficacy of coragen on maize stem borer are not available, hence an experiment has been conducted to evaluate the bio-efficacy of coragen 20 SC against maize stem borer apart from its crop safety under field condition, safety against *Coccinella* sp. and finally grain yield.

MATERIALS AND METHODS

A field experiment was conducted at Maize Research Centre, Agricultural Research Institute, Rajendranagar during *Kharif* 2009 and *Rabi* 2009-10 to evaluate the bio-efficacy of Coragen 20 per cent w/v SC against stem borers of maize. Maize hybrid 30 V 92 was grown by adopting all standard package of practices. Experiment was laid out in Randomized Block Design with seven treatments and three replications. Plot size was 27 sq m.