Internat. J. Agric. Sci. Vol.3 No.2 June, 2007 : 47-48

Bioefficacy of ~ endosulfan 35 % EC on brinjal shoot and fruit borer, *Leucinodes orbonalis* Guence (*Lepidoptera : Pyralidae*)

A.G. SREENIVAS[1], SUSHILA NADAGOUDA[1], V.B. NARGUND AND Y.S. AMARESH*
Dept. of Plant Pathology, College of Agriculture, UAS, Bheemarayanagudi, GULBARGA (KARNATAKA) INDIA

ABSTRACT
Trial carried out at Agriculture College farm, Bheemarayanagudi during *kharif* 2000 – 01 & 2001- 02 revealed that new molecule a endosulfan 35 % EC another isomer of commercial endosulfan 35 % EC was found effective at 2.0 ml/lit to curb the menace of brinjal shoot and fruit borer and to harvest better fruit yield of 33.48 t/ha which was at par with other dosages as well as with commercial endosulfan 35 % EC 3.0 ml and monocrotophos 36 SL at 2.0 ml/lit.

Key words : Brinjal, A endosulfan 35 % EC, *Leucinodes orbonalis.*

INTRODUCTION

The Brinjal (*Solanum melongena* L.) is an important vegetable crop and is grown all the year round. Brinjal is highly vulnerable to the shoot and fruit borer, *Leucinodes orbonalis* Guen. which damage the crop all throughout its period. Peswani and Lal (1961) reported 20 % wereas, Krishnaiah and Vijay (1975) reported up to 70 % yield loss due to this pest. Between 1970 and 1980, control of the pest was relied more on organophosphorous and carbamate insecticides which gave satisfactory control of this pest (Krishnaiah et al, 1976). Later during 1980's farmers switched over to application of synthetic pyrethroids (Tewari and Krishna Moorthy, 1983). Insecticide pressure to control this pest was so much that the pest developed resistance soon to almost all the chemicals available in the market. The IPM strategy for the control of the pest is not yet standardized. So, now farmers are left with only one option i.e., use of selective new molecules. In this contest a endosulfan 35 % EC, (a new promising chemical of Excel Industries Limited, Mumbai) containing 70 % of active ingredient was tried at different levels in comparison with traditional endosulfan 35 EC, monocrotophos 36 SL and fenvalerate 20 EC.

MATERIALS AND METHODS

Seedlings of popular hybrid MEBH – 11 was raised in the nursery and one month old seedlings were transplanted in the main field on 21st July and 2nd August during 2000-01 and 2001-02 seasons, respectively, in a plot size of 5.25 X 4.2 Sq. mt with a row to row and plant to plant distance of 75 X 60 cm. The trial consisted of nine treatments (Table 1) and three replications. Treatments were imposed when the pest reached threshold limit and first treatments were imposed on the crop when it was 60 days old.

Totally five treatments imposition was made at an interval of seven days. Observation were recorded a day prior to imposition as well as three day later on per cent shoot and fruit damage on five randomly selected and tagged plants per replications. Observations on fruit damage were recorded immediately after each harvest by counting the total number of fruits damaged out of total fruits harvested per plot and per cent fruit damaged was worked. Later the data on per cent shoot and fruit damage was transformed to arc sine and analysed by followed DMRT. Similarly yield per plot recorded was computed to per ha basis and it was also analysed statistically.

RESULTS AND DISCUSSION

The data recorded on per cent shoot damage was minimum (22.45%) in a endosulfan 35 % EC at highest dosage of 8 ml/lit which was at par with all the lower dosages except the lowest i.e.2.0 ml/lit as well as with standard check. The damage on fruits registered non significant difference among all the dosage levels of a endosulfan 35 % EC, except highest dosage. The test compound at 2.0 ml/lit recorded 22.92 % fruit damage which was at par with commercial a endosulfan 35 % EC and monocrotophos 36 SL. The untreated control suffered heavily from the fruit borer damage (40.89%).

Cumulative mean yield of brinjal showed that a endosulfan 35 % EC @ 2 ml/lit registered fairly good yield of 31.48 t/ha which was at par with its other dosages and also with commercial a endosulfan 35 % EC @ 3.0

* Author for correspondence.
[1]Dept. of Entomology, College of Agriculture, UAS, Bheemarayanagudi, GULBARGA (KARNATAKA) INDIA

Table 1 : Efficacy of α endosulfan 35 % EC against brinjal shoot & fruit borer, *Leucinodes orbonalis*

T. No.	Treatments	Dosage (ml/lit)	% shoot damage (3 DAA)	% fruit damage (3 DAA)	Fruit Yield (t/ha)
T_1	α endosulfan 35 % EC	2.0	26.97 [b] (31.29)	22.92 [b] (28.59)	33.48 [b]
T_2	α endosulfan 35 % EC	3.0	24.00[a] (28.27)	22.90 [b] (28.51)	34.23 [b]
T_3	α endosulfan 35 % EC	4.0	23.45 [a] (28.96)	20.76 [b] (27.08)	34.32 [b]
T_4	α endosulfan 35 % EC	6.0	23.38 [a] (28.91)	19.34 [b] (26.01)	35.34 [b]
T_5	α endosulfan 35 % EC	8.0	22.45 [a] (26.90)	17.88 [a] (24.89)	41.32 [a]
T_6	Monocrotophos 36 SL	2.0	26.26 [a] (30.82)	21.95 [b] (27.93)	35.87 [b]
T_7	Endosulfan 35 EC	3.0	24.45 [a] (29.64)	19.96 [b] (26.51)	34.95 [b]
T_8	Fenvalerate 20 EC	2.0	23.26 [a] (28.90)	16.05 [a] (23.62)	40.16 [a]
T_9	Untreated control	--	42.23 [c] (40.53)	40.89 [c] (39.75)	24.48 [c]
		CV (%)	4.97	7.54	4.02
		S Em (±)	0.87	1.22	0.80
		CD (5%)	2.62	3.67	2.39

Figures in the parentheses are angular transformed values
DAA : Days after application.

ml/lit and monocrotophos 36 SL @ 2.0 ml./lit. There are no supporting evidence available to substantiate the present findings. However, owing to the more residues of commercial endosulfan 35 % EC, its bad effects experience in the ecosystem, the new molecule a endosulfan 35 % EC can be encouraged for use against fruit borers. But the data on residual toxicity, safetyness etc are needed to be studied.

ACKNOWLEDGEMENT

Authors are very much acknowledged to Excel Industries Limited Mumbai, for sponsoring the trial.

REFERENCES

Krishnaiah, K., Tandon, P.L. and Jagan Mohjan, N. (1976). Control of shoot and fruit borer of brinjal, *Leucinodes orbonalis* with new insecticides, *Pesti.*, **10 :**14-40

Krishnaiah, K. and Vijay, O.P., (1975). Evaluation of brinjal varieties for resistance of shoot & borer, *Leucinodes orbonalis* Guen, Entomologists Newsletter, **7 (4) :** 2-3.

Peswani, K.M. and Lal, R. (1961). Estimation of losses of brinjal fruits causing shoot and fruit, *Leucinodes orbonalis* Guen, *Indian J. Ent.*, **26 :** 112-113.

Tewari, G.C., and Krishna moorthy, P.N. (1983). Effectiveness of synthetic pyrethroids against the pest complex of brinjal. *Entomon.*, **8 :** 365 –368.

Received : May, 2006; Accepted : January, 2007