



## Evaluation of Certain new Insecticides Against Mealybug (*Maconellicoccus hirsutus* Green) on Mesta

**Key words :** Insecticides, Mealybug, Mesta.

Mesta (*Hibiscus sabdariffa* L. and *Hibiscus cannabinus* L.) a herbaceous annual bast fibre crop believed to be originated from Afro-Asian countries, ranks next to jute in fibre production. Mesta is most adoptive than jute under diverse conditions of climate and soil and it is also very resistant to drought (Berger, 1969). Mesta has proved as a major substitute for jute and is successfully being grown in tropical and sub tropical regions. The major producing countries are India, China, Thailand, Egypt, Sudan and Bangladesh. In India Mesta has a prominent place with an area of 200 thousand ha. and production of 1057.1 thousand bales with an average yield of 1428 kg ha<sup>-1</sup> (F.A.O. Report, 2003). In India it is majorly grown in Andhra Pradesh, Bihar, West Bengal and Tripura. In A.P it is mainly concentrated in Vizianagaram and Srikakulam districts accounting for 98.7 per cent area of total area in the state (Sreelatha and Raju, 2004). The sucking pests viz., aphids, leafhoppers, whiteflies and mealybug are some common pests attacking the mesta crop. Among all these pests mealybug (*Maconellicoccus hirsutus* Green) is the major pest which is causing an accountable damage of 25-40% and that directly impact the fibre yield (Rao *et al.*, 1988). Since most of the conventional insecticides have been reported to be ineffective against this pest, an experiment was conducted with some promising insecticides to evaluate their efficacy against mealybug on mesta.

The studies were conducted at Agricultural Research Station farm, Amadalavalasa during 2003-2006. The experiment was laid out in a randomized block design (RBD) with 8 treatments viz., imidacloprid, methyl parathion, methyl demeton, chlorpyrifos, fipronil, monocrotophos, neem oil and untreated check each replicated 3 times and the plot size was 4x3 sq.m. The desired concentrations of the sprayable insecticides were applied with the help of knapsack sprayer. All the treatments were applied at 90 days after sowing and the observations were recorded one day before application as pre treatment count while post treatment counts were taken at weekly intervals from one square meter area. The data was converted by using the below said formula. The fibre yield data were also recorded after retting process. ( Ghosh *et al.* 2003).

$$\text{Per cent of pest incidence} = \frac{\text{No. of infested plants} \times 100}{\text{Total no. of Plants}}$$

In the insecticidal control, the data regarding the two sprays of the three years were pooled together and the cumulative efficacy of the treatments against the mealybug (*Maconellicoccus hirsutus* Green) are presented in Table 1 and Fig. 1.

The overall mean efficacy of the treatments varied from 5.23 to 20.53 per cent. All the treatments were significantly superior over control in reducing the mealybug incidence. Among these fipronil @ 0.5 mL L<sup>-1</sup> was found to be effective by recording lowest (5.23%) infestation with highest fibre yield (17.91 q ha<sup>-1</sup>) followed by imidacloprid @ 0.2 mL L<sup>-1</sup> which recorded 5.68% infestation with an yield of 17.30 q ha<sup>-1</sup> and these two treatments are on par with each other. The results are inconformity with Pandit and Pathak (2000) and Raju *et al.* (2003). Whereas untreated check recorded highest (20.67%) infestation with lowest fibre yield (10.18 q ha<sup>-1</sup>). The next best treatments were chlorpyrifos (7.05%), methyl demeton (7.24%), methylparathion (8.65%) and monocrotophos (10.29). The results are in agreement with Veni *et al.* (1973), Raju and Rao, 1984, Rao *et al.* (1981) and Rao *et al.* (1988).

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Fig.1 Effect of treatments on mesta mealybug

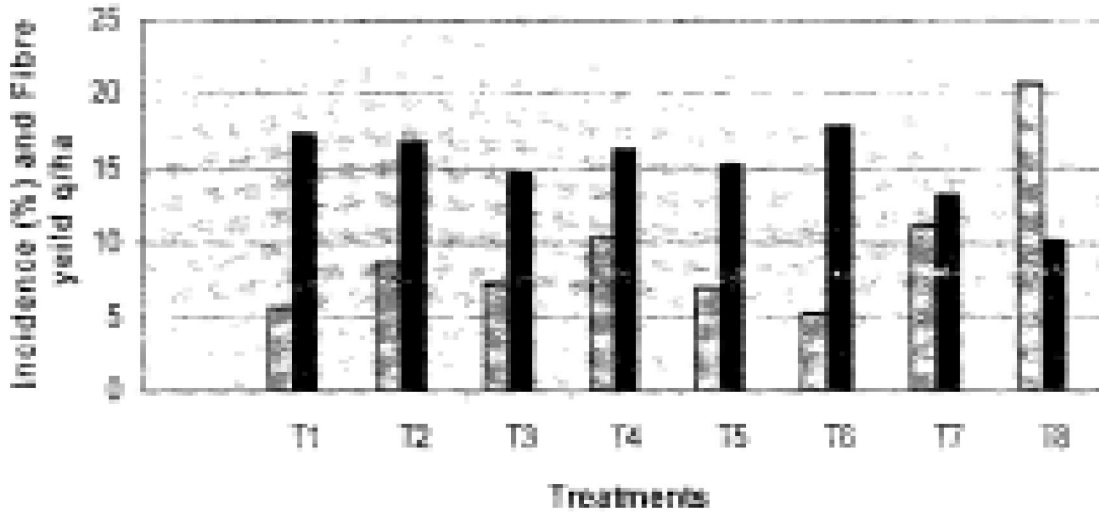


Table 1. Effect of treatments against mealybug incidence of mesta

Treatments	Incidence (%) before spraying	Incidence (%) after spraying	Fibre yield (q ha <sup>-1</sup> )
T1 : Imidacloprid (0.2ml/lit)	16.85	5.68	17.30
T2 : Methyl parathion (1 ml/lit)	17.01	8.65	16.87
T3 : Methyl Demeton (2 ml/lit)	17.56	7.24	14.82
T4 : Monocrotophos (1.6 ml /lit)	16.57	10.29	16.35
T5 : Chlorpyriphos (2.5 ml/lit)	16.75	7.05	15.24
T6 : Fipronil (0.5. ml/ lit)	17.10	5.23	17.91
T7 : Neem oil(2%) (5 ml/ lit)	16.58	11.19	13.23
T8 : Untreated check	17.08	20.67	10.18
F test	NS	Sig	Sig
SEM (±)		0.28	0.42
C.D (0.05%)		0.052	0.98

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Agricultural Research Station  
Amadavalasa - 532 185  
Andhra Pradesh

**P Seeta Ramu  
A K Raju  
V Raja Bapa Rao**

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