

# Studies on efficacy of fipronil 80 WG a new formulation and other chemicals against chilli thrips

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## ABSTRACT

A field experiment was conducted at J.V.R. Horticultural Research Station, Malyal, Warangal during 2006 and 2007 to study the bio efficacy and phytotoxicity of new formulation along with other insecticides against thrips in chilli in three replications. Treatments include the spraying of new formulation Fipronil 80 WG in three doses *i.e.* Fipronil 80 WG @ 30 g a.i/ha, Fipronil 80 WG @ 40 g a.i/ha, Fipronil 80 WG @ 50 g a.i/ha and Fipronil(Regent) 5% SC @ 40 g a.i/ha, Acephate 75% SP @ 468.75 g a.i/ha, Imidacloprid (confidor) 200 SL @ 30g a.i/ha and untreated control. The results revealed that the Fipronil 80 WG @ 50 g a.i/ha recorded lowest number of thrips and is on par with Fipronil 80 WG @ 40 g a.i/ha, Regent 5% SC @ 40g a.i/ha and Acephate 75% sp @ 468.75 g a.i/ha, whereas Confidor 200 SL and fipronil 80 WG @ 30g a.i/ha were found least effective against thrips. None of the treatments had shown any phytotoxicity symptoms on chilli crop.

**Key words :** Efficacy, Fipronil, Chilli, Thrips

## INTRODUCTION

Chilli (*Capsicum annum* L.) is an important commercial crop grown in India and Andhra Pradesh. Andhra Pradesh is the major chilli growing state in the country, contributing 33 per cent of national production with an area of 2.35 lakh hectares. The losses caused due to insect pest complex is very enormous. Among various insect pests attacking chilli crop, thrips *Scirtothrips dorsalis* is a major pest causing huge economic losses to chilli growers (Reddy and Puttaswamy, 1983). The present study was therefore, carried out to know the efficacy and phytotoxicity of new formulation of Fipronil along with other chemicals for the control of thrips in chilli.

## MATERIALS AND METHODS

The field experiment was conducted at J.V.R. Horticultural Research Station farm, Malyal during *khari* 2006 and 2007, to assess the efficacy of new formulation and other chemicals against thrips in chilli. The experiment was laid out in a Randomized Block Design with three replications in a plot size of 10 x 10 sqm. The chilli planting was done with a spacing of 60 cm x 60 cm using LCA 334 as test variety. All the crop management practices except the treatment sprays were followed for maintaining healthy crop. There were seven treatments including untreated control (Table 1).

Spraying was done with high volume knapsack sprayer and through coverage of leaf area, tender shoots and fruits was ensured using 500 litres of water per hectare. In each treatment five plants were selected at random and tagged for counting thrips population. From

each plant five leaves were observed for thrips count at 3, 7 and 10 days after spray (DAS). The first spraying was given soon after an initial symptom of thrips incidence was observed. Two more sprays were done at 10 days interval. The crop was also observed for phytotoxicity symptoms like injury to leaf tip, surface, wilting, vein clearing, hyponasty and epinasty at 3, 7 and 10 DAS and expressed as score values (0-10 scale). Finally dry pod yield was also calculated and expressed, as quintals per acre.

## RESULTS AND DISCUSSION

The observations recorded regarding the effect of treatments was given in the table. From the table, it was revealed that Fipronil 80 WG @ 50 g a.i/ha was found to be the most effective treatment and is at par with Fipronil 80 WG @ 40 g a.i/ha, Regent 5% SC @ 40 g a.i/ha and Acephate 75% SP @ 468.75 g a.i/ha at 3,7 and 10 DAS as it recorded lowest no. of thrips and highest yield. It was also observed that the efficacy of these three treatments increased with increase in days after spray. Whereas, Confidor 200 SL @ 30 g a.i/ha was found to be the least effective against thrips, as the thrips count increased with increase in days after spray, but significantly superior over untreated control.

Regarding the yield, significantly highest yield was recorded with the spraying of Fipronil 80 WG @ 50 g a.i/ha (16.35 q/ac) and is at par with Regent 5% SC (16.03 q/ac), Fipronil 80 WG @ 40g a.i/ha (15.03 q/ac) and Acephate 75% SP @ 468.75 g a.i/ha (14.72 q/ac). Confidor 200 SL @ 30g a.i/ha recorded lowest yield of 11.23 q/ac and is at par with untreated control (11.71 q/

**Table 1 : Evaluation of Fipronil 80 W G against chilli thrips - 2006-07**

Sr. No.	Treatments	Dosage		No. thrips/5 leaves			Yield (q/ac)	Phytotoxicity (0-10 Scale)		
		g a.i/ha	Formulation/ ha	3 DAS	7DAS	10 DAS		3 DAS	7DAS	10 DAS
1.	Untreated control	--	--	22.3	27.01	32.7	11.71	0	0	0
2.	Fipronil 80 WG	30	37.5	15.45	17.03	20.25	12.12	0	0	0
3.	Fipronil 80 WG	40	50.0	14.0	11.33	9.25	15.03	0	0	0
4.	Fipronil 80 WG	50	62.5	16.25	7.72	8.50	16.35	0	0	0
5.	Regent (Fipronil) 5%SC	40	800	15.75	8.25	10.35	16.03	0	0	0
6.	Acephate 75SP	468.75	625	14.75	7.31	8.75	14.72	0	0	0
7.	Confidor 200 SL	30	151	20.75	21.3	25.2	11.23	0	0	0
	C.D. (P=0.05)			3.51	2.75	3.45	1.25			
	S.E.±			1.72	1.35	1.69	0.86			

ac). The results were in confirmation with the findings of Bucchloz and Nauen (2001) and Kabir *et al.* (1994).

From the study it was also clearly evident that none of the treatments have shown any phytotoxicity symptoms at 3, 7 and 10 DAS on chilli crop.

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