

## Field evaluation of insecticides and fungicides for the control of whorl maggot, *Hydrellia philippina* and rice blast, *Pyricularia grisea*.

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### ABSTRACT

Field experiments conducted to evaluate efficacy of insecticides viz., flubendiamide RIL038 20WDG, spinosad 45 and fungicides viz., isoprothiolane, tricyclazole alone and in tank mix combinations for the control of whorl maggot, *Hydrellia philippina* and rice blast, *Pyricularia grisea*. Flubendiamide and spinosad were effective against whorl maggot with 4.5 and 4.2 mean percent damaged leaves as compared to 13.9 percent in the untreated control. The whorl maggot damage in fungicidal treatments viz. isoprothiolane and tricyclazole was 7.9 and 8.7%, respectively. Fungicides viz., isoprothiolane and tricyclazole significantly reduced the neck blast incidence to the tune of 20.6 and 19.8 percent, respectively as compared to 66.6 percent in untreated control. The neck blast incidence declined further in tank mix combinations of fungicide and insecticide varying between 10.4 and 17.5 percent. The whorl maggot damage in combination treatments was also significantly at par with damage in sole insecticidal treatments.

**Key words :** rice, blast, whorl maggot, insecticide and fungicides

Rice crop is ravaged by a number of insect-pests and diseases through out the cropping season. In a number of rice growing areas in Himachal Pradesh, the incidence of blast, whorl maggot and leaf folder is observed at the same stage of crop growth. The occurrence of insect-pests and diseases together demands the necessity of fungicidal and insecticidal applications at the same time. Therefore, a combined application of effective fungicides and insecticides is a practical necessity. The experiment was, therefore, constituted with two insecticides like flubendiamide RIL038 20WDG @ 0.25g/litre water and Spinosad 45 SC @ 0.25g/litre and two fungicides isoprothiolane 40 EC @ 1.5 ml/litre and tricyclazole 75 WP @ 0.6 g/litre water to find their efficacy on insect pests like whorl maggot and blast, as well as the compatibility of the test insecticides and fungicides for the control of rice pests.

The experiment was carried out with three replication in randomized block design during 2009 and 2010. The variety grown in the experiment was HPR 957 and foliar spray was done at 35 DAT depending upon the first appearance of whorl maggot. For the control of neck blast, the treatments were applied at

the panicle emergence and 15 days thereafter. The data were recorded for damage by whorl maggot on 10 randomly selected hills/plot at 20-25 days after application of the treatments and for neck blast severity, the data were recorded at the time of harvest.

The per cent damage by whorl maggot was significantly lower in the insecticide and insecticide-fungicide combination treatments. Flubendiamide application of and spinosad resulted in 4.5 and 4.2 percent damaged leaves, respectively as compared to 13.9 per cent in the untreated control (Table 1). Flubendiamide+fipronil combination has been reported to be effective for rice pests viz., leaf folder and whorl maggot (Sharma and Srivastava, 2009). Results of the study indicated that the insecticide treatments significantly reduced the damage by whorl maggot and the damage was also significantly reduced in insecticide and fungicide combination treatments. Application of fungicides viz., isoprothiolane and tricyclazole significantly reduced the neck blast severity to the tune of 19.5 and 20.6 percent, respectively as compared to 66.6 per cent in untreated control (Table 1). The reduction in percent neck blast severity was highly significant in fungicide and insecticidal combinations.

**Table1. Efficacy and compatibility of insecticides, fungicides and their tank mix combinations against whorl maggot and neck blast.**

Treatment	Dose g ml <sup>-1</sup> litre	Incidence of Whorl Maggot (%) Pooled Mean	Neck Blast Incidence (%) Pooled Mean	Grain Yield (kg ha <sup>-1</sup> ) Pooled Mean
Flubendiamide RIL038 20WDG	0.25 g	4.5 (12.0)	50.4 (45.2)	2.97
Spinosad 45 SC	0.25 g	4.2 (11.8)	56.7 (49.1)	3.28
Isoprothiolane (Fuji- One 40 EC)	1.5 ml	7.9 (15.5)	19.5 (26.2)	4.13
Tricyclazole (Beam 75 WP)	0.6 g	8.7 (16.4)	20.6 (26.9)	3.91
Flubendiamide + Isoprothiolane	0.25g+1.5ml	5.0 (12.7)	16.4 (23.9)	4.51
Flubendiamide + Tricyclazole	0.25g+0.6g	4.8 (12.4)	15.0 (22.8)	4.05
Spinosad + Isoprothiolane	0.25g+1.5ml	5.0 (12.6)	17.5 (24.3)	3.98
Spinosad + Tricyclazole	0.25g+0.6g	4.4 (11.8)	10.4 (18.7)	4.25
Untreated control	-	13.9 (21.8)	66.6 (54.8)	2.77
CD (P = 0.05)	-	1.55	3.93	0.52

Figures in parentheses are arc sine transformed means

However, the neck blast severity in insecticidal treatments was quite high ranging from 50.4 to 56.7 % and comparable to the severity in untreated control (66.6 %). The yields in all the insecticidal and fungicidal treatments were higher as compared to untreated control. Ali and Bhat (2005) found that seed treatment with isoprothiolane and tricyclazole was effective and the crop in such treated plots was not infected by rice blast up to 35 days of sowing.

Tank mixing of fungicides with insecticides involved in present study did not reduce the efficacy of insecticides against whorl maggot and that of the fungicides against rice blast. Hence, they are compatible

with each other for spray application to control the rice pests.

## REFERENCES

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