

Evaluation of Foliar Sprays of Tilt (Propiconazole) for the Combined Control of Karnal Bunt and Loose Smut of Wheat

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From time to time, a number of fungicides from Carboxin, Carbendazim and triazole group have been recommended separately (1,2,3,4) as seed treatment for the control of loose smut (*Ustilago segetum*) and as foliar sprays (at anthesis stage) for Karnal bunt of wheat (*Neovossia indica* = Syn. *Tilletia indica*). Since the infection of both the diseases takes place at the floral stage, it was thought worthwhile to evaluate if the tilt (propiconazole), which is applied as foliar spray for the control of Karnal bunt, can also provide an additional control of loose smut. In view of the above, a coordinated experiment was planned with an objective to find out if the application of propiconazole provides an additional protection against loose smut of wheat.

The data were generated from 2004-05 to 2006-07 at various coordinating centres viz. Ludhiana, Pantnagar, Faizabad and Jaipur and reported in this publication. Karnal bunt as well as loose smut infested/infected seed of wheat (Variety PBW 343) was supplied to all the centers by Ludhiana centre. The Karnal bunt infested seed (2%) was sown in each plot (4 x 3m) and each plot was surrounded by single infector row of loose smut infected seed so that the inoculum was readily available for loose smut infection. Seed rate @ 40 kg/Acre (120g/ plot) was used and three treatments each of single spray of tilt (0.1%) viz. (i) at boot leaf stage (ii) at flower

initiation stage (iii) at heading stage were given and replicated four times. The fourth treatment was comprised of the check (unsprayed). All the standard agronomic/control practices were followed for raising the crop. The loose smut incidence was recorded either in the harvested seed by embryo count method or from the standing crop raised by this seed.

The data in Table 1 show that there was an almost uniform pattern of loose smut incidence over the years under different treatments. Pantnagar centre has also recorded the similar results on the basis of embryo count method. The Faizabad centre recorded comparatively lower incidence of loose smut when propiconazole was sprayed at flowering or heading stage. The Jaipur centre did not record any incidence of loose smut in any of the treatments during 2006-07. From the above studies, it is concluded that propiconazole sprays applied for the control of Karnal bunt did not provide additional control of loose smut.

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Table 1. Loose smut Incidence (%) under field condition at Ludhiana centre

Treatment	2004-05	2005-06	2006-07	Pooled
Spray of boot leaf stage (T ₁)	0.11	0.09	0.48	0.22
Spray of flowering stage (T ₂)	0.07	0.10	0.73	0.30
Spray of heading stage (T ₃)	0.08	0.11	0.66	0.28
Control (unsprayed) (T ₄)	0.11	0.13	0.55	0.26
CD (5%)	NS	NS	NS	NS

Table 2. Loose smut incidence (%) by embryo count method at Pantnagar and Faizabad centre

Treatments	Pantnagar				Faizabad		
	2004-05	2005-06	2006-07	Pooled	2004-05	2005-06	Pooled
T ₁	0.39	1.90	0.03	0.77	0.22	0.68	0.45
T ₂	0.30	1.50	0.05	0.62	0.05	0.00	0.03
T ₃	0.49	1.40	0.10	0.66	0.00	0.05	0.03
T ₄	0.46	1.60	0.05	0.70	0.63	0.75	0.69

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