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Short Note

Efficacy of fungicides in controlling Taphrina leaf spot of turmeric

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Leaf spot of turmeric (*Curcuma domestica Val*) incited by *Taphrina maculans* Butler is an important disease and occurs in turmeric growing areas in India (Mehrotra, 1986). It is very destructive in lower and mid-hills of Himachal Pradesh. Therefore, field trials were carried out during 2001-2002 to 2003-2004 to select out effective fungicides for controlling this disease at the research farm of Hill Agricultural Research and Extension Centre, Dhaulakuan (H.P.). The trials were planted in 3x2.4 m^2 plots with row to row distance 45 cm and plant to plant distance of 20 cm using highly susceptible local clone (Sirmour Local) following recommended package and practices (Anonymous, 2003) through out the studies.

Fungicides used were Indofil M-45 (A coordinated product of zinc and manganese ethylene bisdithio carbamate), Antracol (Zinc- propylene-bis-dithio carbamate), Tilt 25 EC (Propiconazole (1- 2-(2,4-dichlorophenyl)-4-propyl-1, 3-dioxolan-2-yl-methyl) 1H-1, 2,4-triazole), Safal (A coordinated product of mancozeb and carbendazim), Bayleton (triadimefon) and Trooper (tricyclazole 75% W.P.) .

The first spraying was given immediately after appearance of the disease in the field followed by two more applications at 20 days interval. The observations on intensity of disease were recorded 20 days after last spray on 5 randomly selected plants based on per cent leaf area covered by the disease when most of leaves became blighted and dried.The yield data expressed as kg/plot were recorded on fresh rhizomes/plot. The data were subjected to analysis of variance as per Steel and Torrie (1986).

The data on the efficacy of fungicidal sprays on percent disease severity, percent disease control over check and yield (kg/plot) are given in Table-1. All the fungicides resulted in significantly less disease severity than the unsprayed control plots during all the three years. Least mean disease severity of 33.3 per cent was recorded in three foliar sprays of Tilt 25 EC +sticker followed by Tilt 25 EC (37.6%) with the corresponding percent mean disease control of 47.5 and 40.7 percent over unsprayed check, respectively. Three sprays of fungicide Tilt 25 EC with sticker gave highest mean yield of 13.9 kg/plot followed by Tilt 25 EC (12.6 kg/plot). Three sprays of Indofil M.45 with sticker resulted in 11.8 kg/plot whereas in case of unsprayed check the average yield was 9.1 kg/plot. As has been observed in the present studies foliar sprays of Tilt 25 EC and Indofil M.45 were found to be effective in reducing *Taphrina* leaf spot and increasing yield (Singh *et al.* 2003).

It is concluded that three foliar sprays of Tilt 25 EC @ 0.1% at 20 days interval have been found highly effective against *Taphrina* leaf spot and could be used for the control of disease as it is commercially available in the market.

Table 1. Effect of fungicides for the control of leaf spot and rhizome yield of turmeric

Fungicides	Dose (%)	Per cent disease Severity (%)				% Control over Check	Yield (kg/plot)			
		2001-02	2002-03	2003-04	Mean		2001-2002	2002-2003	2003-2004	Mean
Tilt 25 EC	0.1	37.6 (37.8)	36.2 (36.9)	39.1 (38.7)	37.6 (37.8)	40.7	12.0	13.1	12.8	12.6
Antracol	0.25	53.5 (47.0)	48.3 (44.0)	51.1 (45.6)	50.9 (45.5)	19.8	10.9	11.3	11.1	11.1
Bayleton	0.1	54.3 (47.4)	50.7 (45.4)	54.1 (47.4)	53.0 (46.7)	16.5	10.5	10.9	10.6	10.7
Trooper	0.1	56.1 (48.5)	54.8 (47.7)	57.2 (49.1)	56.0 (48.4)	11.8	10.3	10.4	10.2	10.3
Indofil M-45 +Sticker	0.25	49.2 (44.3)	41.9 (40.3)	45.2 (42.2)	45.4 (42.2)	29.6	11.3	12.1	11.9	11.8
Safal	0.25	40.8 (39.6)	38.1 (38.1)	40.9 (39.7)	39.9 (39.1)	37.1	11.5	12.5	12.2	12.1
Indofil M-45	0.25	52.4 (46.4)	43.6 (41.3)	46.9 (43.2)	47.7 (43.6)	24.8	111.2	11.6	11.4	11.4
Tilt 25EC +Sticker	0.1	35.1 (36.3)	33.4 (35.3)	31.6 (34.2)	33.3 (35.2)	47.5	13.2	14.3	14.1	13.9
Control	-	65.6 (54.0)	61.6 (51.7)	63.5 (52.8)	63.5 (52.8)	-	9.1	9.3	8.9	9.1
CD (P=0.05)		2.4	2.1	2.2	2.2	-				.40

Figures in parentheses are angular transformed values.

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