

Bioassay of Different Fungicides Against Greengram Leaf Spot Incitant (*Cercospora canescens* Ellis and Martin)*

M. M. JAMADAR and G. M. PADAGANUR

Department of Plant Pathology
University of Agricultural Sciences, Dharwad - 580 005

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Abstract : The efficacy of fungicides against *Cercospora canescens*, an incitant of greengram leaf spot was tested under laboratory conditions. RH-2161 and carbendazim (MBC) completely inhibited the mycelial growth of the fungus whereas moderate inhibition was given by captafol and ziram. Copper oxychloride was poor in inhibiting the growth of the fungus.

Introduction

The leaf spot of greengram (*Vigna radiata* (L) Wilczek) caused by *Cercospora canescens* Ell. and Mart. has been, a threat in Thailand, Indonesia, Philippines and Columbia (Poehlman *et al.*, 1973). In India, its incidence and severity has been recorded from time to time (Munjal *et al.*, 1960; Khandar *et al.*, 1983). There are very few reports on the performance of fungicides *in vitro* against the growth of *C. canescens* (Khandar *et al.*, 1986). The present investigation was an attempt to evaluate certain systemic and non-systemic fungicides against this fungus in the laboratory.

Material and Methods

Copper oxychloride, ziram, captan, mancozeb and captafol each at 1000 and 2000 ppm from non-systemic category and RH-2161, triadimefon and carbendazim each at 250, 500 and 1000 ppm from systemic category were tested by Sharville's method (1961). The potato dextrose agar was poisoned by adding desired concentrations of each fungicide, aseptically. The culture discs (about 5 mm) were inoculated to poisoned media

and incubated for 16 days at room temperature ($28 \pm 1^\circ \text{C}$). Suitable control without fungicide was maintained.

The efficacy of fungicides was expressed as per cent inhibition over the control which was calculated by using Vincent's (1927) formula.

Results and Discussion

Of the eight fungicides tested, the systemic fungicides performed better in controlling the growth of the fungus (Table). Among the non-systemics, maximum inhibition of mycelial growth was obtained by captafol followed by ziram. Mancozeb and captan were moderate in controlling the growth of fungus while, least inhibition was obtained by copper oxychloride.

Among the systemics, RH-2161 and carbendazim completely checked the growth of the fungus even at 250 ppm concentration. On the other hand moderate control was obtained by triadimefon. Khandar *et al.*, (1986) obtained complete mycelial inhibition of the fungus in benoyml (Benlate) carbendazim (Bavistin) and captafol (Difolatan). Taking

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Table . Per cent inhibition of mycelial growth of *C. canescens* by eight fungicides

Sl. No.	Fungicide	Concentration in ppm.			
		250	500	1000	2000
1.	Copper Oxychloride	—	—	41.74 (44.34)	45.81 (51.43)
2.	Ziram	—	—	58.17 (72.19)	60.00 (75.01)
3.	Captan	—	—	50.47 (59.50)	53.15 (64.04)
4.	Captafol	—	—	58.18 (72.21)	61.06 (76.59)
5.	Mancozeb	—	—	55.94 (68.62)	57.70 (71.42)
6.	Carbendazim	90.00 (100.00)	90.00 (100.00)	90.00 (100.00)	— —
7.	RH-2161	90.00 (100.00)	90.00 (100.00)	90.00 (100.00)	— —
8.	Triadimefon	45.46 (50.81)	48.57 (50.27)	55.51 (67.94)	— —
9.	Control	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Systemic fungicides		Non-systemic fungicides			
S.Em ±		0.76		0.67	
C D at 5%		1.62		1.41	

Figures in parentheses are the original percentage.

toxicity indices into consideration, Khandar *et al.* (1986) interpreted that Benlate, Bavistin and Difolatan completely checked the mycelial growth even at minimum concentration (50 ppm) while, mancozeb (Dithane M-45), carboxin (Vitvax) and chlorothalonil (Daconil -2787) proved to be less toxic. They graded triadimefon (Bayletan) and kitazins (Kitazin) to be poor inhibitors based on their toxicity indices.

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