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RESEARCH ARTICLE

Studies on variability on different fungicides in the growth of twenty isolates of *Fusarium oxysporum* f.sp. *ciceri* causing vascular wilt of chickpea

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ABSTRACT

Field survey was undertaken and seventy one samples of chickpea wilted plants were collected from twenty three locations in different districts namely, Bhopal, Raisen, Rajgarh, Sagar, Sehore and Vidisha of Vindhyan Plateau Zone of Madhya Pradesh. Out of seventy one isolates, only twenty were found pathogenic to chickpea. These isolates were categorized into six different groups on the basis of colony diameter, growth pattern and number of micro and macro conidia. The physiological studies of the representative isolates of these six groups were made on six different fungicides at 1000 ppm concentration. All the fungicides differed significantly from each other. The minimum mean radial growth (39.68 mm) was recorded in groups 5 of isolates Ri4, Ri5 and V_2 and maximum (41.04 mm) in group one consisting of B_2, B_3, Se_6 and Se_8. The maximum mean radial growth (84.46 mm) was obtained on untreated control and minimum (15.36 mm) on Thiram. These isolates exhibited three types of growth pattern namely, fluffy partially submerged and submerged. The maximum number of micro conidia were produced on untreated (control) (7.58 million/ml) and minimum (1.29 million/ml) on Thiram. Similarly, the maximum number of macro conidia were produced on untreated control (2.67milion/ml) and minimum (0.19 million/ml) on Thiram.

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INTRODUCTION

Chickpea (*Cicer arietinum* L) is one of the important pulse crops grown throughout the country. The crop is prone to several diseases, out of which wilt caused *by Fusarium oxysporum* f.sp. *ciceri* is much dangerous than other diseases (Singh and Dahiya, 1973). The incidence of the disease varies from 10-100 per cent depending on the locality. In Madhya Pradesh, its incidence has been reported from 0-60 per cent (Gupta *et al.*, 1983). In order to find suitable lines resistant to this disease, it is necessary to study the variability of the pathogen. The isolates of the chickpea wilt pathogen obtained from various locations in Vindhyan plateau zone of Madhya Pradesh, were grouped into six groups on the basis of morphological and cultural characters (Gupta *et al.*, 1986) and physiological basis (Kushwaha *et al*., 1974). The variability in the growth of twenty isolates on six different fungicides is reported in this paper.

MATERIALS AND METHODS

All the pathogenic isolates were grown on six fungicides namely,Carbendazim (Bavistin 50% wp), Triadimefan (Bayleton 25 % wp), Myclobutinal (systhane 10% wp), Thiram (75 % DS), Mancozeb (75% Wp) and Fytolan (Copper oxychloride 50 % Wp) (Kotwal, 1981) at a 1000 ppm concentration *in vitro*.