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Studies on leaf spot of chilli

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ABSTRACT :

The leaf spot of chilli is important and destructive disease in chilli growing areas of Maharashtra, which is caused by *Alternaria alternata*. Therefore studies were undertaken at PGI, MPKV, Rahuri during the year 2016-17. For this leaves of chilli leaf spot were collected from the PGI farm MPKV Rahuri, which yielded the pathogen *Alternaria alternata*. The pathogenicity of *Alternaria alternata* was tested by Koch's postulates, which proved that the test pathogen was pathogenic to chilli. *In vitro* evaluation of effect of temperature and humidity revealed that test pathogen grew well with maximum sporulation at optimum temperature of 27°C with 80 per cent relative humidity. Six bioagents such as *Trichoderma viride*, *Trichoderma harzianum*, *Trichoderma hamatum*, *Pseudomonas fluorescens*, *Bacillus subtilis* and yeast (*S. cerevisiae)* were evaluated *in vitro* against isolated pathogen applying Dual Culture Technique. Among them *T. harzianum* was found most effective in inhibiting the growth of *Alternaria alternata* of about (76.23 %) this was followed by *T. hamatum* (70.46 %), yeast (*S. cerevisiae)* (57.98 %), *Bacillus subtilis* (43.81%), *Pseudomonas fluorescens* (36.01%) and *T. viride* (34.81%), respectively. Among the six botanicals leaf extracts (2%) tested *in vitro* against the pathogen, *Neem* leaf extract was found most effective inhibiting (55%) of the pathogen *Alternaria alternata* followed by garlic cloves (41.25%), *Tulsi* leaf extract (36.25%), nilgiri leaf extract (32.5%), mixture of onion and garlic leaf extract (30%) and parthenium (28.75%) respectively. A total number of six fungicides *viz.*, Carbendazim (0.05%), Chlorothalonil (0.1%), Hexaconazole (0.1%), Mancozeb (0.1%), Propiconazole (0.1%) and Captan (0.1%) were evaluated *in vitro* against the isolated pathogen applying poison food technique. Among them Mancozeb @ 0.1 %, Carbendazim @ 0.05 % and Captan @ 0.1% recorded maximum growth inhibition of 78.99, 78.66 and 74.78 per cent, respectively of the test pathogen with minimum colony diameter of 17.33 , 17.66 and 20.83 mm, respectively.

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INTRODUCTION

Chilli (*Capsicum annuum* L.) is an imperative spices, vegetable as well as commercial crop. Chilies are having good nutritious value and can be used as