

RESEARCH ARTICLE

Studies on pre- and post emergence damping off on chilli caused by *Pythium ultimum*

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ABSTRACT

Chilli crop is attacked by more than dozen diseases of fungal, bacterial and viral nature leading to great loss to cultivators. Among those diseases, damping off of chilli incited by *Pythium* spp. is responsible for 90 per cent mortality either as pre or post-emergence damping off in nurseries and field conditions. Results indicated that the pre-emergence damping off was responded with significantly lowest seed rot found in PATH-34 (42.4 %) and this variety was at par with PATH-32 (60.3 %), PATH-24 (60.3%), PATH-9 (61.1%), PATH-7 (60.02%), PATH-6 (65.00 %) and PATH-26 (65.0%). Significantly highest seed mortality was noted in 58 entries where number of rotten seeds ranged from 69.6 to 96.7 per cent. Significantly higher germination in sick soil was PATH-34 (28.63 %), PATH-9 (16.41%), PATH-24 (15.61%), PATH-32 (15.61 %), PATH-6 (11.71 %), PATH-7 (11.71%) and PATH-26 (11.71%). While 58 entries have significantly less germination in sick soil. However, the post-emergence damping off the genotypes PATH-6 (22.86%), PATH-9 (22.86%) and PATH-34 (22.86%) were resistant (R) reaction with seedling mortality and the moderately resistant (MR) reaction of seedling mortality were PATH-24 (40.16%), PATH-32 (40.06%), PATH-30 (36.17%) and PATH-07 (31.46%). The 12 germplasm lines expressed moderately susceptible (MS) reaction having post-emergence mortality from 40.2 to 56.8 (%). The 18 germplasm lines expressed susceptible reaction (S) having 56.9 to 73.4 (%) post emergence mortality. The highly susceptible reaction (HS) was expressed by 28 entries having post-emergence mortality from 73.5 to 90 (%).

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INTRODUCTION

Chilli (*Capsicum annuum* L.) also known as red pepper is the member of family Solanaceae. Two species of chilli are under cultivation. The *Capsicum annuum* L. is small in size, more pungent types. Whereas, the *Capsicum frutescense* L. is somewhat larger, mild to moderately pungent types and referred as 'Dhobli Mirchi' and is used mostly as green vegetable. The pungency is due to the active principle capsaicin contained in the skin and septa of the fruit. Chillies are valued principally for their high pungency and for their colour. Chilli forms an indispensable culinary spice in several parts of the

world. It is also used in beverages and in the preparation of medicines. India is the largest producer, consumer and exporter of chillies in the world. The important states growing chilli are Andhra Pradesh, Maharashtra, Orissa, West Bengal, Karnataka, Rajasthan and Tamil Nadu. As per the latest statistics, India produced 1.24 million tonnes of dry chilli from an area of 0.077 million hectares (Anonymous, 2009).

Chilli crop is attacked by more than dozen diseases of fungal, bacterial and viral nature leading to great loss to cultivators. Among these diseases, damping off of chilli incited by *Pythium* spp. is responsible for 90 per cent mortality either as pre or post-emergence damping off in nurseries and fields