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RESEARCH ARTICLE

Cultural, morphological and pathogenic variability in *Fusarium oxysporum* f. sp. *lycopercici* isolates from major tomato growing areas of Karnataka

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ABSTRACT

Twenty three isolates of *Fusarium oxysporum* f. sp. *lycopercici* were collected from major tomato growing areas of Karnataka. They produced three kinds of spores, *viz.,* microconidia, macroconidia and chlamydospors. Mycelia of the pathogen were white cottony to pink often with purple tinge or reddish colouration of the medium. Total isolates were assigned into three groups, on the basis of colony diameter, colony characters, sporulation and degree of pathogenicity. Isolates Fol-1, Fol-4, Fol-6 Fol-9, Fol-11, F ol-13, Fol-15 and Fol-21 showed abundant aerial mycelium and sporulation with maximum colony diameter (75 to 90.0 mm). They showed strong virulence with 75 per cent severity and wilting symptoms were noticed 14 days after inoculation.

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INTRODUCTION

Tomato (*Solanum lycopersicum*, formerly *Lycopersicon esculentum* Mill.) is one of the most widely grown vegetable crops in the world. It is used as a fresh vegetable and can also be processed and canned as a paste, juice, sauce, powder or as a whole (Barone and Frusciante, 2007). Tomato is best adapted to warm and dry environments, but during the hot-wet season, yields are low due to poor fruit-setting caused by the high temperatures, as well as many severe disease problems. Tomato crop is attacked by various plant pathogens, among them Fusarial wilt of tomato caused by *Fusarium oxysporum* f. sp. *lycopersici* (Sacc.) Synder and Hansen is an economically important disease and is a destructive disease of tomato crop worldwide (Jones *et al*., 1991). Today, it has an extensive presence in all continents. Substantial crop losses in infected fields have given the disease international attention. The main aim of grouping of these isolates was to get an initial understanding of variation among the isolates of *F. o.* f. sp. *lycopersici* collected from major tomato growing areas of Karnataka.

MATERIALS AND METHODS

Present investigation was carried out during 2007 to 2010. Laboratory experiments were carried out at the Department of Plant Pathology, College of Agriculture, University of Agricultural Sciences, Dharwad (Karnataka). *F. o.* f. sp. *lycopersici* affected samples were collected during the year 2008- 2009 from different tomato growing regions of Karnataka. The details of location and designation given for each isolates are furnished in Table1.

Twenty three isolates of *Fusarium* spp. obtained upon isolation from wilted tomato plants were compared for variation in morphological and cultural characters on PDA medium. Twenty ml of medium was poured into each sterilized