

Identification and Pathogenecity of *Fusarium* spp. on Cucumber, and its Cross Infectivity on other Cucurbits

Shumaila Shahid

Division of Plant Pathology, Indian Agricultural Research Institute, New Delhi-110012
E-mail: shumaila24amu@gmail.com

Abstract—Various surveys were done and wilted plants were collected from fields of cucumber in different districts of Rajasthan, Haryana, Uttar Pradesh, Uttarakhand and New Delhi. Ten isolates of *Fusarium* spp. were isolated from the wilted cucumber plants. Characterization of *Fusarium* isolates at species level was done and their morphology including colour, texture, mycelial growth pattern, presence of macroconidia and microconidia, presence or absence of septa, branching pattern of mycelium, attachment of spores to hyphae etc. were studied to confirm their identity. Interestingly, along with wilt pathogen, *Fusarium oxysporum*, another species i.e. *Fusarium solani* was also found associated with the wilted plants. Virulence of *Fusarium* isolates was checked through a pathogenecity test under net house condition on a susceptible cucumber cultivar viz., Pusa Uday. Pathogenecity test revealed the virulence of *Fusarium* isolates on cucumber and proved f. sp. (formae specialis) of *F. oxysporum* as *cucumerinum* and *F. solani* as *cucurbitae*. Standardization of the inoculum method was done and soil inoculation method was found better than root-dip inoculation method. Mild to severe wilting was observed in the inoculated plants and disease index was recorded. Based on the virulence pattern, the isolates of *Fusarium* were categorized as highly virulent (HV), moderately virulent (MV) or less virulent (LV) out of which 5 were found highly virulent, 4 moderately virulent and 1 less virulent. Cross infectivity experiment was also conducted on other cucurbits viz., muskmelon and bitter gourd by both soil inoculation and root-dip inoculation method in order to find pathogenecity of the isolates on other host. It was found that 1 isolate was highly virulent and 4 isolates were moderately virulent on muskmelon and bitter gourd. Remaining isolates were either less virulent or non-pathogenic on both the cucurbits. Cross infectivity test revealed the virulence of isolates on different host other than its specific host.