

Investigating the pathogenic differences *Phytophthora capsici* isolates, the cause of root rot and pepper stems collected from Varamin-Pishva region

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Received: 22 Ap., 2019

Accepted: 5 Sep., 2019

ABSTRACT

Phytophthora capsici, is one of the most destructive factors of pepper crown and root rot in pepper cultivation regions across the world. This pathogen attacks the roots and crown of the plant at all growth stages and causes the wilt or death of the plant. In this study, fungus isolates collected from the pepper fields and greenhouses in different regions of Varamin and plants with symptoms of damping-off, root and crown rot. Samples were cultivated in semi-selective *Phytophthora* culture medium (CMA + PARPH) after washing and disinfection. Cultivars were identified on morphological characteristics and identification keys of Erwin Verbiere (1996). The pathogenicity of the species was demonstrated on host plants and the isolate pathogenicity was determined after inoculation on Plato sensitive cultivar by Golsir *et al.* methods. According to results from all sampling from different regions, a total of 10 pure *P. capsici* isolates were obtained. The Ph-pi-51 isolate collected from pepper from Pishva region with a disease severity index of 91.6% was in the statistical group “a” with the highest rate of pathogenesis as the most destructive pathogen. Karimabad Ph-ka-21 isolate, with a disease severity index of 88.6 in the ab statistical group, was the most pathogenic after the first isolate. Also the Ph-ta-16 and Ph-dv-44 isolates with the disease severity index of 48.8 and 33.3 had the lowest rates of disease on pepper and were included in the group of isolates with low pathogenicity.

Keywords: Pepper, *Phytophthora capsici*, isolate, pathogenicity

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