



Phenotypic and Molecular Diagnostic of *Fusarium* spp. Isolates Associated with Potato Roots

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Abstract: This study conducted to diagnose *Fusarium* spp. isolates associated with potato roots phenotypically and genetically. The results of laboratory examination by optical microscopy of fungi accompanying the roots of potato plants showed the presence of 18 *Fusarium* isolates isolated from the roots of potato plants that showed symptoms of wilting and yellowing, which were collected from potato farms in Baghdad and Salah al-Din Governorate. The results of molecular diagnostics using the specialized genetic region primer kit (ITS) (PCR technique) also showed that the three diagnosed isolates belong to *F. oxysporum*, which is one of the main pathogens on the potato that causes *Fusarium* wilt disease. The nucleotide sequences were deposited in the NCBI Gene Bank under the accession number (Mw292595_ Mw292596_ Mw292597), and the pathogenicity test showed the effectiveness of most of the studied isolates in establishing the pathogenic ability on potato buds in vitro as it gave the isolates that were diagnosed with molecular F7, F9, F10, the severity of infection was 83.3, 100 and 100% respectively.

Keywords: *Fusarium oxysporum*, *Fusarium* wilt, Fungal pathogens identification, Molecular diagnostics, NCBI gene bank
