

First report of *Alternaria tenuissima* causing leaf spot in *Podophyllum hexandrum* in Kashmir valley, India

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Podophyllum hexandrum (Royle), commonly known as Himalayan Mayapple is a medicinally important plant that thrives well in alpine Himalayas of Jammu and Kashmir. This study focused on the isolation of fungal endophytes from different tissues (roots, leaves) of *P. hexandrum*. Five endophytic fungi were isolated, of which one was found to be pathogenic. ITS primer gene sequencing using nucleotide BLAST identified four non-pathogenic isolates viz PdFRE1, PdFLE2, PdFLE3, PdFLE4 as *Xylaria karsticola*, *Sordariales* sp., *Nemania diffusa* and *Nodulisporium* sp., respectively. The pathogenic isolate PdFLP was studied in detail. Microscopic and molecular analysis of the pathogenic fungus PdFLP was conducted. BLAST analysis showed 100% nucleotide identity with previously identified *A. tenuissima* isolate (ON712430.1). The pathogen thus isolated was identified as *Alternaria tenuissima* and the pathogenicity was established. To our knowledge, this is the first report of leaf-spot of *P. hexandrum*, caused by *Alternaria tenuissima* in Kashmir valley.

Keywords: Himalayan Mayapple, endophytes, pathogen, BLAST, microscopy, pathogenicity tests

Introduction