



## Diversity of endophytic fungi of *Myricaria laxiflora* grown under pre- and post-flooding conditions

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**ABSTRACT.** *Myricaria laxiflora* is distributed along the riverbanks of the Yangtze River valley. The Three Gorges Dam has dramatically changed the habitat of *M. laxiflora*, which has evolved to develop increased resistance to flooding stress. In order to elucidate the relationship between plant endophytic fungi and flooding stress, we isolated and taxonomically characterized the endophytic fungi of *M. laxiflora*. One hundred and sixty-three fungi were isolated from healthy stems, leaves and roots of *M. laxiflora* grown under pre- and post-flooding conditions. Culture and isolation were carried out under aerobic and anaerobic conditions. Based on internal transcribed spacer sequence analysis and morphological characteristics, the isolates exhibited abundant biodiversity; they were classified into 5 subphyla, 7 classes, 12 orders, 17 families, and 26 genera. Dominant endophytes varied between pre- and post-flooding plants, among different plant tissues, and between aerobic and anaerobic culture conditions. *Aspergillus* and *Alternaria* accounted for more than 55% of all isolates. Although the number of isolates from post-flooding plants

was greater, endophytes from pre-flooding plants were more diverse and abundant. Endophytes were distributed preferentially in particular tissues; this affinity was constrained by both the host habitat and the oxygen availability of the host.

**Key words:** *Myricaria laxiflora*; Endophytic fungi; Diversity; Dominant; Flooding