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Phylogeny and morphology of *Premilcurensis gen. nov.* (*Pleosporales*) from stems of *Senecio* in Italy

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Abstract

Premilcurensis senecionis gen. et and *sp. nov.* was collected on stems of *Senecio* sp. from Forlì-Cesena Province, Italy and is introduced in *Phaeosphaeriaceae* with the support of a unique combination of morphological characters and combined gene phylogenetic analyses. *Premilcurensis* is distinguished from other genera in *Phaeosphaeriaceae* in having fusiform to cylindrical, hyaline to yellow-green ascospores with 3–5 septa, and mucilaginous, wing-like appendages at the central septum. Phylogenies analyses show *Premilcurensis* as a distinct lineage from other genera in the family *Phaeosphaeriaceae* with high bootstrap support. A comprehensive description and micrographs of *P. senecionis* is provided and the new genus is compared with morphologically similar taxa.

Key words: *Dothideomycetes*, new genus, phylogeny, *Phaeosphaeriaceae*

Introduction

The class *Dothideomycetes* was introduced by Eriksson & Winka (1997) under the subdivision *Pezizomycotina* (Kirk *et al*. 2008), and is the largest class in the Phylum Ascomycota (Kirk *et al*. 2008, Hyde *et al*. 2013). Recent studies on this class have incorporated multigene phylogeny, and the classification of *Dothideomycetes* has been updated accordingly (Schoch *et al*. 2009, Nelsen *et al*. 2011, Zhang *et al*. 2012, Hyde *et al*. 2013). Hyde *et al*. (2013) included 22 orders, 105 families and 249 genera in the class *Dothideomycetes* based on morphology and multigene phylogeny, while Wijayawardene *et al*. (2014) included 23 orders 110 families and 1261 genera.

Pleosporales is the largest order in the class *Dothideomycetes* comprising one fourth of all the described species of *Dothideomycetes* (Kirk *et al*. 2008) and species in this order have various lifestyles, such as epiphytes, endophytes or parasites of living plant leaves or stems (Wang *et al*. 2005, Sánchez Márquez *et al*. 2007, Lawrey *et al*. 2012), hyperparasites on fungi or insects, or are lichenized (Schatz 1984, Barr 1987, Zhang *et al*. 2012), or saprobes of dead plant stems, leaves or bark (Shoemaker 1984, Shoemaker & Babcock 1989, Schoch *et al*. 2006, Zhang *et al*. 2009b, 2012, De Gruyter *et al*. 2010, Hyde *et al*. 2013, Quaedvlieg *et al*. 2013). Twenty families have been accepted in the order *Pleosporales* based on molecular data (Boehm *et al*. 2009a, b, Mugambi & Huhndorf 2009, Schoch *et al*. 2009, Shearer *et al*. 2009, Suetrong *et al*. 2009, Tanaka *et al*. 2009, Zhang *et al*. 2009a, b), but lately based on morphological and molecular analyses Hyde *et al*. (2013) placed 41 families under *Pleosporales*.

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