

# Black spot fungi on rosaceous hosts: *Diplocarpon* represents a unique evolutionary lineage within Leotiomyces

## POSTER B56

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### Abstract

The black spot diseases of rosaceous hosts are primarily caused by the species of *Diplocarpon*, formerly known as *Marssonina*. Species of *Diplocarpon* cause severe diseases on several economically important hosts, including garden roses, apple, pear, and strawberry. However, the precise phylogenetic placement of these species is not well understood. In the present study, we used fresh collections and herbarium specimens to infer molecular phylogenetic placement and to clarify the taxonomy and nomenclature of this poorly known group of phytopathogenic fungi. The molecular phylogeny based on 28S and ITS rDNA sequences and including the type species of the genus, *Diplocarpon rosae*, revealed that the genus represents a unique evolutionary lineage within the Helotiales. Two additional species, *Diplocarpon fragariae*, causing leaf scorch disease of strawberry, and *Diplocarpon coronariae*, causing black spot of apple and pear, grouped with the type species and could be distinguished using sequence data. In addition, type specimens of other species in the genus were studied and distinguished based on morphological characters. These species of phytopathogenic fungi were found to grow poorly on artificial media thus limited amounts of molecular data and cultures were available in public databases. However, this study contributes towards a stable platform for the taxonomy of obscure genera of phytopathogenic fungi.