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## Taxonomic and phylogenetic re-evaluation of *Microdochium*, *Monographella* and *Idriella*

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**Abstract**

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Based on morphology and DNA sequence data the taxonomic relationships of *Microdochium*, *Monographella* and *Idriella* were reassessed. *Microdochium* is morphologically and phylogenetically circumscribed, and the sexual genus *Monographella* treated as synonym on the basis that *Microdochium* has more species, is more commonly encountered, and more frequently used in literature. An epitype is designated for *Microdochium phragmites*, and several well-known species are redefined based on their morphology and DNA sequence data (LSU, ITS, BTUB and RPB2). Furthermore, the revision of *Microdochium* led to six new combinations (*M. albescens*, *M. consociatum*, *M. fusariisporum*, *M. maydis*, *M. opuntiae* and *M. stevensonii*) and six new species (*M. citrinidiscum*, *M. colombiense*, *M. fisheri*, *M. neoqueenslandicum*, *M. seminicola* and *M. trichocladiopsis*) being proposed. *Microdochium* s.str. belongs to a monophyletic clade, together with *Idriella lunata* and *Selenodriella*, representing a new family, *Microdochiaceae*, in *Xylariales*. Other species previously accommodated in *Microdochium* belong to different orders in the *Ascomycota*. *Microdochium gracile* belongs to *Sordariomycetes* (incertae sedis) and *Paramicrodochium* is proposed to accommodate this species. *Microdochium tripsaci* belongs to *Ephelis* in *Clavicipitaceae*, while *M. fusarioides* belongs to a new genus, *Microdochiella* in *Orbiliiales*. *Idriella* s.str. is a monotypic genus phylogenetically closely related to *Microdochium*. *Idriella* s.l. separates into different genera in *Xylariales* (incertae sedis) including *Castanediella*, *Selenodriella*, *Idriellopsis*, *Neoidriella* and *Paraidriella*, the last three proposed here as new genera.

**Keywords:** CEREALS; GRASSES; PHYTOPATHOGENIC FUNGI; SORDARIOMYCETES; XYLARIALES

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