

Outlineoffungi.org - Note 623 *Diaporthe*

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Diaporthe Nitschke

Diaporthe (syn. *Phomopsis*) is the most diverse genus in *Diaporthaceae*, with around 2000 species epithets available in public databases. More than 300 phylogenetically defined species and numerous unidentified DNA sequences available in GenBank are evidence of the hyperdiversity in the genus ([Gomes et al. 2013](#); [Udayanga et al. 2014b, 2021](#); [Manawasinghe et al. 2019](#)). Based on a comprehensive phylogenetic reappraisal of the genus, [Norphanphoun et al. \(2022\)](#) formulated a species-group concept through multi-gene phylogenetic analysis. These species groups are based on 13 monophyletic clades representing new and few formerly known species complexes ([Norphanphoun et al. 2022](#)). Although numerous species considered within species groups are primarily defined based on multi gene phylogeny, differentiating species based on commonly used sets of genes are often argued by various authors ([Udayanga et al. 2014a](#); [Hilário et al. 2021 a, b](#)). For instance, [Hilário et al \(2021 a, b\)](#) observed a high degree of recombination among the formerly recognized phylogenetic species within *D. eres* and *D. amygdali* species complexes. Furthermore, recent phylogenetic studies further reveal that the genus is paraphyletic and several morphologically distinct genera such as *Phaeocystostroma* and *Stenocarpella* are placed among the species complexes of *Diaporthe* family level phylogenetic trees ([Gao et al. 2017](#); [Norphanphoun et al. 2022](#)). Therefore, generic limits of this genus should be reconsidered in future studies with more available data and taxonomic overview within the family.

References

- Gomes RR, Glienke C, Videira SIR, Lombard L, Groenewald JZ, Crous PW. 2013 – *Diaporthe*: a genus of endophytic, saprobic and plant pathogenic fungi. *Persoonia-Molecular Phylogeny and Evolution of Fungi* 31(1), 1–41. <https://doi.org/10.3767/003158513X666844>
- Gao Y, Liu F, Duan W, Crous PW, Cai L. 2017 – *Diaporthe* is paraphyletic. *IMA fungus* 8(1), 153–187. <https://doi.org/10.5598/imafungus.2017.08.01.11>
- Hilário S, Santos L, Alves A. 2021a – *Diaporthe amygdali*, a species complex or a complex species? *Fungal Biology* 125(7), 505–518. <https://doi.org/10.1016/j.funbio.2021.01.006>
- Hilário S, Gonçalves MF, Alves A. 2021b – Using genealogical concordance and coalescent-based species delimitation to assess species boundaries in the *Diaporthe eres* complex. *Journal of Fungi*, 7(7), 507. <https://doi.org/10.3390/jof7070507>
- Manawasinghe IS, Dissanayake AJ, Li X, Liu M, Wanasinghe DN, Xu J, Zhao W, Zhang W, Zhou, Y, Hyde KD, Brooks S. 2019 – High genetic diversity and species complexity of *Diaporthe* associated with grapevine dieback in China. *Frontiers in Microbiology* 10, 1936. <https://doi.org/10.3389/fmicb.2019.01936>
- Norphanphoun C, Gentekaki E, Hongsanan S, Jayawardena R, Senanayake C, Manawasinghe I, Abeywickrama P, Bhunjun CS, Hyde KD. 2022 – *Diaporthe*: Formalizing species-group concepts. *Mycosphere* 13(1), 752–819, <https://doi.org/10.5943/mycosphere/13/1/9>
- Udayanga D, Castlebury LA, Rossman AY, Chukeatirote E, Hyde KD. 2014a – Insights into the genus *Diaporthe*: phylogenetic species delimitation in the *D. eres* species complex. *Fungal Diversity* 67(1), 203–229. <https://doi.org/10.1007/s13225-014-0297-2>
- Udayanga D, Castlebury LA, Rossman AY, Hyde KD. 2014b – Species limits in *Diaporthe*: molecular re-assessment of *D. citri*, *D. cytoporella*, *D. foeniculina* and *D. rudis*. *Persoonia-*

Molecular Phylogeny and Evolution of Fungi 32(1), 83–101.
<https://doi.org/10.3767/003158514X679984>

Udayanga D, Liu X, Crous PW, McKenzie EH, Chukeatirote E, Hyde KD. 2012 – A multi-locus phylogenetic evaluation of *Diaporthe* (*Phomopsis*). Fungal Diversity 56(1), 157–171.
<https://doi.org/10.1007/s13225-012-0190-9>

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