



Editorial – Advances in understanding *Diaporthe*

AJ Dissanayake¹, AJL Phillips²

¹Institute of Plant and Environment Protection, Beijing Academy of Agriculture and Forestry Sciences, Beijing 100097, People's Republic of China.

²University of Lisbon, Faculty of Sciences, Biosystems and Integrative Sciences Institute (BioISI), Campo Grande, 1749-016 Lisbon, Portugal

E-mail addresses: AJ Dissanayake (asha.janadaree@yahoo.com), AJL Phillips (alan.jl.phillips@gmail.com)

The genus *Diaporthe* was introduced by Nitschke in 1867 to accommodate taxa in the order *Sphaeriales* with stromata, often with blackened regions in the substrate. *Phomopsis* was formerly known as the asexual morph and these two genera have been linked. *Diaporthe* was chosen over *Phomopsis* as the name for the genus since it is the older name. When most names of *Diaporthe* or *Phomopsis* were defined, species in these genera were considered to be host-specific. However, recent studies using molecular data have shown that while a few species are host-specific many have an extensive host range.

Members of *Diaporthe* are pathogens, parasites, and endophytes of plants, pathogens of humans and other animals, saprobes and soil inhabitants. *Diaporthe* species are pathogens mainly of woody plant hosts, although some species occur on non-woody plants of agricultural importance. These fungi cause a wide range of disease symptoms, including stem and branch cankers, as well as leaf, fruit, seed and root diseases. Prior to 2000, it was difficult to differentiate members of *Diaporthe*, since many species share similar morphologies. The taxonomy of *Diaporthe* species is currently being redefined based on a combination of morphological, cultural and phytopathological characters, mating types and DNA sequence analysis. Nevertheless, the demarcation of species within *Diaporthe* became acceptable only once multi-gene sequence data were generated. Recent multi-gene phylogenies for this genus based on large sets of deposited cultures have identified potential isolates for epitypification, thus setting the application of formerly recognized names. Epitypification and genetic characterization of the type species, *Diaporthe eres*, established a firm basis for the genus enabling researchers to distinguish other taxa in the complex.

This issue of Mycosphere includes papers that address various aspects of *Diaporthe*, including their identification, taxonomy, pathology and biology. The precise application of accepted names of plant pathogenic fungi is essential for the development of effective biosecurity and trade strategies. Based on a multigene analysis of all available DNA sequences from ex-type isolates, an updated list of *Diaporthe* species, together with details of types, geographical distribution and known hosts, are provided.

The papers in this volume comprise several significant findings and encompass a wide range of topics related to *Diaporthe*. There is a great need for studies on *Diaporthe* particularly those considering disease progression and etiology. At the taxonomic level, we now have a solid phylogenetic backbone for *Diaporthe* and this will allow rapid identification of species, providing a basis for the important biological studies.