

Molecular Characterization of Neopestalotiopsis Species Associated with Camellia Sinensis from Selected Tea Plantations in Sri Lanka

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Tea [*Camellia sinensis* (L.) O. Kuntze] is an important commercial crop cultivated in many countries such as China, India, Sri Lanka and Kenya to produce the renowned beverage called “tea”. Immature leaves and buds are utilized in the production of tea and hence it is vital to maintain health of the tea foliage to maintain optimal quality and quantity of tea yield. “Gray blight” is a destructive fungal disease caused by *Pestalotiopsis*-like taxa, affecting tea leaves. In this study, several *Pestalotiopsis*-like taxa were isolated from tea leaves exhibiting gray blight symptoms from the major tea cultivation zones of Sri Lanka including Southern, Uva, Central and Sabaragamuwa provinces. The genetic diversity of the isolates initially identified as *Neopestalotiopsis* spp., based on morphology and internal transcribed spacer 1, 5.8S and the internal transcribed spacer 2 of the ribosomal RNA gene cluster (ITS) sequence data were assessed by multigene phylogenetic analysis of the specific gene regions ITS, partial sequences of β -tubulin (*TUB2*) and translation elongation factor 1- α (*TEF1- α*). Results revealed that *Neopestalotiopsis clavispора*, *N. petila*, *N. saprophytica*, *N. hydeana* and *N. surinamensis* distributed over eight tea plantation sites in Sri Lanka. However, phylogenetic identification of some fungal isolates remained ambiguous due to unstable topology of the multigene phylogram of this genus. In pathogenicity assays, all of these species induced typical gray blight lesions on artificially inoculated tea leaves confirming Koch’s postulate. Among the identified isolates, only *N. clavispора* has been recorded previously as a gray blight associated fungal pathogen in *C. sinensis* globally, yet not within Sri Lanka. Also, this study confirmed that the cause of gray blight disease is not confined to a single pathogenic fungal species, but rather a complex of fungi.

Keywords: Gray Blight, Pathogenicity Testing, Pestaloid Fungi, Sporocadaceae

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