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## Plant associated *Plectosphaerella* species in Japan

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**Purpose:** Species of the genus *Plectosphaerella* (Plectosphaerellaceae, Sordariomycetes) are well known as plant associated fungi in the world. Although 14 plant diseases caused by the genus have been recorded in Japan, the taxonomic position of each pathogen to species level was not often discussed. The objective of this study was to know the diversity of the plant associated *Plectosphaerella* species in Japan based on detail morphological observation and multi-locus phylogenetic analyses (ITS, LSU, TEF, TUB and CAL).

**Methods:** We examined 46 isolates of Japanese *Plectosphaerella* species in this study. Among them, 28 isolates were found from our field surveys, and the other 18 isolates were received from the Genetic Resources Center, NARO (NARO Genebank), Japan. Its morphological examination was performed on SNA at 25°C after 7 days. Molecular phylogenetic trees were produced based on five loci.

**Results and Conclusions:** Our phylogenetic analyses revealed that 15 isolates made 10 monophyletic clades within the genus *Plectosphaerella*. Based on our detail morphological analysis, each clade did not match any of known species. Therefore, at least 10 unknown species are present in the genus. The host plants of the unknown species are *Sagittaria trifolia* (Alismataceae), *Cucurbita moschata* (Cucurbitaceae), *Solanum tuberosum* (Solanaceae), *Zantedeschia aethiopica* (Araceae), *Lactuca sativa* var. *crispa* (Asteraceae), *Oryza sativa* (Poaceae), *Musa* sp. (Musaceae), and *Ranunculus* spp. (Ranunculaceae). A new identification key for all species of *Plectosphaerella* that included known and newly discovered species in this study is proposed herein.