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Molecular Characterization, Genetic Diversity and Similarities of *Cladosporium* species as Revealed by: Internal Transcribed Spacer – Polymerase Chain Reaction (ITS-PCR)

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The current investigation compared genetic diversities, and genetic similarities within and among Cladosporium species populations using PCR-based markers. Nuclear ribosomal DNA internal transcribed spacers have been used successfully to analyze intraspecific and interspecific relationships in various fungi. In the current study, we have used the internal transcribed spacer (ITS) to aid compare the ITS in length and restriction patterns. The internal transcribed spacer (ITS) was amplified using polymerase chain reaction combining primers ITS4 and ITS5. PCR products were digested with three restriction enzymes and separated by agarose electrophoresis. Restriction patterns generated by CfoI and MspI and RsaI were unique for most species assayed. Clear results were obtained by using ITS-PCR in the present study. The results were consistent with those based on biological characteristics and morphological features. The ITS-PCR fingerprinting methods presented here led to clear differentiation of the isolates at the species level. Fingerprinting profiles generated readily discriminated between each of the 6 species. Cluster analysis further supported this observation and clusters corresponding to each species are readily identified in the dendrograms.