



Conference Abstract

Molecular and biochemical methods for species identification among the genus *Cuscuta*

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Abstract

Genus *Cuscuta* (Convolvulaceae) comprises of stem holoparasitic plants that are scientifically highly valuable, as they cause extensive crop damage. They exhibit high morphological similarity, which complicates their species identification. Determining the taxonomical status of obtained specimens from Bulgaria, is crucial for exploring the genetic diversity of the genus and establishing the phylogenetic relationships within the taxon. Thereby different correlations with geographic region and particular environmental conditions can be established. This study employs molecular and biochemical methods, including ITS region sequence analysis of rDNA, RAPD analysis, and HPLC/MS analysis of flavonoids, to identify *Cuscuta* species and conduct phylogenetic analysis. Overall, a successful identification has been made - while ITS PCR products provide more accurate species identification and phylogenetic information, RAPD profiles are convenient for quick identification. Detailed investigation of the RAPD profiles is required due to differences correlating with the habitats of the species. Nevertheless, flavonoid profiles prove themselves as a valuable biochemical marker for species identification. All of the aforementioned methods are suitable and useful for species identification among the genus *Cuscuta*, depending on the needs and aims of the conducted analysis.

Keywords

dodders, RAPD, ITS, flavonoids, HPLC/MS

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Conflicts of interest

The authors have declared that no competing interests exist.