Characterization of endophytic fungi isolated from *Anaphalis contorta* (D. Don) Hook. f., a medicinal plant from Manipur

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Endophytic fungi constitute an important part of microbial diversity. Endophytic fungi have unique genetic and biological systems to produce many bioactive compounds. In the present work, endophytic fungi were isolated from *Anaphalis contorta*, a medicinal plant locally used by the people of Manipur. Major plant portions viz., leaf, stem, root and inflorescence were used for isolation. A total of 40 different endophytic fungi were isolated of which 36 isolates produced spores which belongs to Sordariomycetes, Dothideomycetes, Eurotiomycetes and Mucoromycetes and 4 isolates were sterile. Identification was based on morphological characteristics. All the isolated fungi were tested for antagonistic activity and grouped under 5 antagonistic classes; antagonistic inhibition percentage were calculated for 11 isolates against pathogenic strains of *Curvularia lunata*, *Fusarium oxysporum*, *Rhizoctonia solani*, *Aspegillus niger* and *Aspergillus flavus*. The isolates were also tested for the production of 5 extracellular enzymes. Number of isolates producing protease, lipase, amylase, cellulase and laccase were 35, 37, 39, 39, and 28 respectively. Phosphate solubilisation, ammonia production and HCN production were assessed qualitatively for plant growth promotion abilities. The present study reveals that endophytic fungi are abundantly harboured in all parts of the plant. The antagonistic activity suggests an important source of antimicrobial compounds as well as effective biocontrol agent. The production of extracellular enzymes and plant growth promotion activities shows a high potential for clinical microbiology, production industry and agriculture.

**Key words:** Endophytic fungi, bioactive compounds, *Anaphalis contorta*, antagonistic activity, extracellular enzymes.