

Isolation of endophytic fungi from *Azadirachta indica* A. Juss. and its antimicrobial activity

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Abstract

The isolation, characterization and antimicrobial activities of endophytic fungi from leaves, stems and inner barks of *Azadirachta indica* A. Juss. (Neem) were studied. The plants were collected from University of Mandalay Campus. This study was carried out at Microbiology Laboratory of Botany Department, University of Mandalay from December 2017 to July 2018. Potato Dextrose Agar (PDA) medium was used for the isolation of endophytic fungi. Nine endophytic fungi were isolated and classified from leaves, stems and inner barks of *Azadirachta indica* A. Juss. Among them, ATL 1, ATL 2, ATL 3, ATL 4 were isolated from leaves. ATL 5, ATL 6 were isolated from stems. ATL 7, ATL 8, ATL 9 were isolated from inner barks. The isolated fungal strains were confirmed ATL 1 as *Colletotrichum* sp., ATL 2 as *Curvulariasp.*, ATL 3 as *Pestalotiopsis* sp., ATL 4 as *Nigrospora* sp., ATL 5 as *Aspergillus* sp., ATL 6 as *Trichoderma* sp., ATL 7 as *Fusarium* sp., ATL 8 as *Penicillium* sp., ATL 9 as *Aspergillus* sp. Five isolated fungal strains: ATL 5 - ATL 9 from stems and inner barks of *Azadirachta indica* A. Juss. (Neem) were tested for antimicrobial activities at Biotechnology Research Department, Kyaukse. Those isolated fungal strains showed the antimicrobial activities against *Staphylococcus aureus*, *Bacillus cereus*, *Escherichia coli* and *Candida albicans*. The isolated fungal strains; ATL 5 (*Aspergillus* sp.), and ATL 8 (*Penicillium* sp.) showed the inhibition zones (24 mm) against *Bacillus cereus* and ATL 6 (*Trichoderma* sp.), ATL 7 (*Fusarium* sp.), and ATL 9 (*Aspergillus* sp.) showed the inhibition zones (17 mm) against *Staphylococcus aureus* and *Escherichia coli*. Those isolated endophytic fungi from stems and inner barks of Neem plants will be a good source of bioactive and antimicrobial activities against the pathogenic bacteria in agriculture and medicines.

Key words: *Azadirachta indica* A. Juss., Endophytic fungi, Antimicrobial

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