

Search for Bioactive Compounds from Endophytic Fungi Isolated from the Leaves of *Artocarpus heterophyllus* Lam.

W. M. S. M. Ekanayaka¹ and U. L. B. Jayasinghe²

¹Uva Wellassa University, Sri Lanka

²Institute of Fundamental Studies, Kandy

Endophytes are a novel and potential source of modern medicine, agriculture and industry. As the structurally diverse and biologically active secondary metabolites possessing rich source the endophytic fungi have gained increased attention in the last decade. Endophytic fungi are the fungi, which colonize plants internally without apparent adverse effects and found in plants. The relationship between the endophyte and its host plant may range from mutualistic symbiosis to latent phytopathogenesis. Here we report the isolation of three endophytic fungi from the leaves of *A. heterophyllus* and the phytotoxicity of one of the crude extract of fungal toxins produced in the media of rice.

Artocarpus heterophyllus in family Moraceae is widely distributed in tropical countries of Asia. In addition to the use of fruit as a staple food, various parts of the plant have been used in the traditional medicine, Infected leaves and healthy leaves of the *A. heterophyllus* were collected from the Institute of Fundamental Studies premises in Kandy. Three fungal colonies were isolated on PDA media. Out of three fungi, one fungus was selected for further studies since it was found in both healthy and diseased leaves of *A. heterophyllus*. A pure culture of fungus was inoculated in solid media of rice. After four weeks of growth, solid media were ground and extracted successively with organic solvents n-hexane, ethyl acetate and methanol in room temperature. Solvents were evaporated to dryness. Bioassays were conducted to detect antioxidant activity against DPPH (Diphenyl picryl hydrazyl) using spectrophotometry method and phytotoxicity against *Lactuca sativa*.

None of the crude fungal extracts displayed significant antioxidant activity while ethyl acetate extract showed significant inhibition of Lettuce seeds shoot germination at 1000 ppm level concentration. Hence the crude ethyl acetate extract is a potential candidate for the isolation of natural phytotoxic compounds.

Keywords: Endophytic fungus, *Artocarpus heterophyllus* Lam., phytotoxicity