

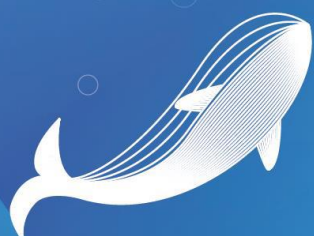


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## INTERNATIONAL CONFERENCE ON THE SUSTAINABLE DEVELOPMENT OF MARINE BIO-RESOURCES

### CONFERENCE GUIDE

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## Evaluation of selected biological activities of *Colletotrichum gloeosporioides*, *Nigrospora oryzae*, and *Marasmius palmivorus*

Y.G.A.D.K. Bandara, S.A.D. Chathurangi, H.A.K.D. Premasiri, Nelum P. Piyasena\*,  
N.K.B. Adikaram, Lalith Jayasinghe

National Institute of Fundamental Studies, Hanthana Raod, Kandy, Sri Lanka

Email: nelum.pi@nifs.ac.lk

### Abstract:

Endophytic fungi inhabit plant tissues without causing disease symptoms and engage in continuous metabolic interactions with the host, serving as a significant source of diverse and potent bioactive metabolites. The endophytic fungi *Colletotrichum gloeosporioides*, *Nigrospora oryzae*, and *Marasmius palmivorus* were isolated from the leaves of *Gymnema sylvestre*, *Chrysophyllum* sp., and *Syngonium angustatum*, respectively, and were identified based on the sequence analysis of the ITS region of the rDNA gene. These fungal strains exhibited weak antioxidant activity in both DPPH radical scavenging and FRAP assays when compared to the ascorbic acid. At 1000 ppm, the  $\alpha$ -glucosidase inhibitory activity of *Colletotrichum gloeosporioides*, *Nigrospora oryzae*, and *Marasmius palmivorus* was  $95.10 \pm 1.44$  %,  $88.06 \pm 2.57$  %, and  $89.47 \pm 0.43$  %, respectively. All fungal strains exhibited high  $\alpha$ -glucosidase inhibitory activity. All three fungal strains exhibited weak acetylcholinesterase inhibitory activity. Weak  $\alpha$ -amylase inhibitory activity was observed in *Colletotrichum gloeosporioides* and *Marasmius palmivorus*, while *Nigrospora oryzae* exhibited moderate inhibitory activity, with a percentage inhibition of  $68.52 \pm 7.63$ %. These fungal strains exhibited weak cytotoxic activity against *Artemia salina* in comparison to the potassium dichromate. The minimum inhibitory concentrations for *Colletotrichum gloeosporioides* and *Nigrospora oryzae* in the lettuce seed germination assay were  $>500$  mg/mL, while that for *Marasmius palmivorus* was  $>1000$  mg/mL.



Dr. Nelum P. Piyasena is a Research Fellow at the National Institute of Fundamental Studies, Sri Lanka, with over 18 years of experience in natural products chemistry and tea biochemistry. She holds a PhD and M.Phil. from the University of Peradeniya. Her research focuses on bioactivity studies of Sri Lankan flora, endophytic fungi, and health-promoting effects of black tea. She previously served as Head of the Biochemistry Division at the Tea Research Institute. Dr. Piyasena has received prestigious awards including the President's Award and Kandiah Memorial Award. A DAAD Fellow, has published 20 journal articles, 2 book chapters, and holds a patent. She has supervised numerous students and served as a postgraduate examiner. She is an active member of SLAAS and DAAD Alumni.