Abstract No: BO-13 **Biological Sciences**

Assessment of phytochemicals and antifungal effect of *Croton aromaticus* against postharvest fungal pathogens isolated from tropical fruits

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Chemical control using synthetic chemical fungicides is still the most common method of controlling postharvest diseases of fruits. Plant extracts which are rich in antimicrobial secondary metabolites such as terpinoids, alkaloids, saponins and flavonoids could be possible alternatives for synthetic fungicides. Current study was focused on evaluating the antifungal effect of ethanolic extract of *Croton aromaticus* (Kappettiya) leaves *in vitro* against mycelial growth and the spore germination of postharvest fungal pathogens isolated from fruits of banana (*Colletotrichum musae, Rhizopus sp*., *Lasiodiplodia theobromae*) papaya (*Rhizopus stolonifer*, *Colletotrichum gleosporioides, Lasiodiplodia theobromae)* and mango (*Alternaria alternata, Pestalotiopsis mangiferae, Lasiodiplodia theobromae)*. Surface sterilized diseased banana, papaya and mango fruit tissues were cultured on PDA plates in order to obtain pure cultures of possible fungi and they were identified by morphological and microscopic characteristics, using identification keys. Inhibitory effect of the ethanolic extract of *C. aromaticus* against test pathogens were investigated by well diffusion method using PDA medium, by incorporating crude extract dissolved in DMSO, ranging from 1 mg/ml up to 300 mg/ml concentrations along with the positive (Captan) and negative (DMSO) controls. Significant ($P < 0.05$) inhibitory effects were exhibited by the ethanolic extract of *C. aromaticus* leaves against all test pathogens except *L. theobromae.* The highest mycelial growth and spore germination inhibition of most of the pathogens were observed at 100 mg/ml. The lowest Minimum Inhibitory Concentration of the leaf extract (5 mg/ml) was observed for spore germination inhibition of *C. gleosporioides* and *P. mangiferae.* TLC analysis revealed four compounds having Rf values of 0.551, 0.672, 0.810 and 0.913**.** Phytochemical screening of ethanolic extract revealed the presence of alkaloids, terpenoids, quinones, phytosterols and flavonoids. Current findings indicate the potential use of ethanolic extract of *C. aromaticus* leaves in controlling banana, papaya and mango postharvest fungal pathogens *in vitro.*

Keywords: Antifungal assay, *Croton aromaticus*, Phytochemicals