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Antifungal Activity of *Croton aromaticus* L. *in vitro*, Against Post-Harvest Fungal Pathogens Isolated from Tropical Fruits

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ABSTRACT

Synthetic fungicides are widely used in controlling postharvest diseases of fruits worldwide. The interest of finding natural bioactive components has increased due to the harmful effects of synthetic fungicides on environment and health. Present study was an attempt to evaluate the antifungal activity of ethanolic extract of Croton aromaticus leaves in vitro, against mycelial growth and spore germination of postharvest fungal pathogens isolated from banana (Colletotrichum musae, Lasiodiplodia theobromae), papaya (Colletotrichum gleosporioides, L. theobromae) and mango (Alternaria alternata, Pestalotiopsis mangiferae, L. theobromae), and to analyze phytochemicals of the extract qualitatively. Inhibitory effect of the ethanolic extract was investigated by well diffusion method with different concentrations (1, 5, 10, 30, 50, 100, 200 and 300 mg ml^{-1}) along with positive control (Captan) and negative control (DMSO). Significant inhibitory effects ($P < 0.05$) were exhibited by the extract against C. musae, P. mangiferae, A. alternata and C. gleosporioides except L. theobromae. The lowest minimum inhibitory concentration (MIC) value of the leaf extract (5 mg ml^{-1}) was observed for C. gleosporioides and P. mangiferae. Qualitative phytochemical analysis revealed the presence of alkaloids, terpenoids, quinones, phytosterols and flavonoids in leaf extract of the plant. Thin layer chromatographic (TLC) assay revealed the presence of four bioactive compounds with Rf values of 0.551, 0.672, 0.810 and 0.913.

Keywords: *antifungal assay, croton aromaticus, postharvest diseases.*