

***In Vitro* Antifungal Activity of Selected Plant Extracts Against *Lasiodiplodia Theobromae*, Causes Mango Stem End Rot**

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Abstract

Phytopathogens are primarily controlled through the application of synthetic products, which can harm human and environmental health. As a result, the use of plant-derived extracts as eco-friendly bioagents has become increasingly popular due to the biologically active compounds present in the plants. This study was conducted to determine the antifungal activity of the ethanol and acetone leaf extracts of *Coccinia grandis*, *Gymnema sylvestre*, *Argyrea pomacea*, and *Erythrina subumbrans* against the causal pathogen of mango stem-end rot. The pathogen was isolated from diseased mangoes and identified as *Lasiodiplodia theobromae*. The pathogenicity of the isolated *L. theobromae* also was confirmed on healthy samples of mangoes. The antifungal activity of leaf extracts was assessed using the food poison technique, with leaf extracts tested at different concentrations of 50, 25, and 12.5 mg/ml. Results indicated that the ethanol extract of *E. subumbrans* at 50 mg/ml showed the highest percentage of mycelial growth inhibition (29.21 ± 0.65 %) followed by the acetone extract of *G. sylvestre* (28.97 ± 0.79 %) at the concentration of 25 mg/ml against the *L. theobromae*. The percentage of mycelial growth inhibition was significantly different among all treatments ($P < 0.05$), which may be attributed to the diverse phytochemicals present in the plant leaves. Therefore, further studies are required to isolate and identify the specific bioactive compounds responsible for these antifungal activities.

Keywords: *Antifungal activity, Lasiodiplodia theobromae, Leaf extract, Mango stem end rot*