

EFFICACY OF *Ricinus communis* (CASTOR) LEAVES EXTRACTION AS ECO-FRIENDLY FUNGICIDE FOR DENDROBIUM (PURPLE)

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ABSTRACT

Ricinus communis (Castor) produced potential source of safer and more effective substitutes for synthetically produced antimicrobial agents where can be used as bio fungicide. Therefore the aim of this study was to evaluate the effect of *Ricinus communis* against fungal diseases of Dendrobium. The present study was carried out at the botanical Garden, Gampaha. The field experiment was conducted in Completely Randomized Design (CRD) with six treatments randomized in five replicates. *In Vitro* and *In Vivo* experiments were consisted of six different treatments and tested against isolated *Colletotrichum sp.*. Among different treatments tested the Mancozeb (0.2%) showed minimum mycelial growth (0 mm) followed by plant extract at 0.4% (T4) concentration (1.41 mm). Leaf extract 0.1%(45%), 0.2%(67%), 0.3%(76%) were found the least effective in inhibiting mycelial growth over 0.4%(97%) and Mancozeb 0.2% (100%). The maximum concentration of leaf extract (0.4%) was found significantly superior over 0.3%, 0.2% and 0.1% concentrations. Similarly *In Vivo* studies, consisted of six treatments among different treatments tested 0.1% (61.20%), 0.2% (56.40%), 0.3% (47.80%) were found least effective in inhibiting disease over 0.4% (23.60%) and Mancozeb 0.2% (20.40%). The maximum concentration of 0.4% was found significantly superior over 0.3% , 0.2% and 0.1% concentrations. The most effective fungicidal concentration was recorded in the ethanol extract (0.4%) when compared to other concentrations. Ethanolic leaf extract of *Ricinus communis* (0.4%) was identified as the most effective and eco- friendly fungal disease management for Dendrobium. In the present study the extract of *Ricinus communis* leaf effectively and significantly inhibited the growth of *Colletotrichum sp.* under *In Vitro* and *In Vivo* condition but none of the form absolutely inhibited the growth of the respective fungi even at the concentration of 0.4%. Therefore higher concentration of different forms of *Ricinus communis* leaf extract should be tested under *In Vitro* and *In Vivo* condition and the effective one may also be tested in the field as an alternative to the chemical for the eco-friendly management of the disease.

Keywords: Antifungal activity, *Colletotrichum sp.* ,Dendrobium, Mycelial growth, *Ricinus communis*

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