

IN-VITRO INVESTIGATION ON EFFICACY OF SELECTED MEDICINAL PLANT EXTRACTS ON RICE BLAST FUNGUS *Magnaporthe grisea*

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ABSTRACT

Being ranked next to wheat, Rice (*Oryza sativa* L.), an important staple food of Sri Lanka, is globally hampered by blast disease caused by *Magnaporthe grisea*. Synthetic fungicides are administered to manage it, however, due to Sri Lanka's policy to reduce application of synthetic chemicals, an alternate method of using untapped indigenous resources was explored. An *in-vitro* investigation was carried out to test the efficacy of selected medicinal plant leaf extracts against *M. grisea*. 20% of *Vernonia cinerea*, *Mentha arvensis*, *Aegle marmelos*, *Mimosa pudica* and *Ocimum tenuiflorum* hot water leaf extracts were mixed with PDA media and tested for antifungal activities. Three replicates were maintained along with the non-plant extract as control. For the phytotoxic confirmation test was done on 100 paddy seeds treated with leaf extracts (20%). Experiments were arranged in a Complete Randomized Design. The mycelial growth of *M. grisea* and rice seed germination were recorded. The data were subjected to ANOVA and Tukey's HSD multiple comparison test to determine the best treatment at $P < 0.05$ using SAS 9.1. Significant growth inhibition of 98.07% and no conidial production were observed only in *O. tenuiflorum* treatment whereas in other treatments inhibition percentages were less than 40.27% and were not significant among them at $P < 0.05$. The seed germination varied from 80 - 93% and indicated no phytotoxic activity of botanicals in seed germination. Therefore, the findings conclude that 20% leaf extract of *O. tenuiflorum* could be useful to manage the blast fungi in paddy seed germination and extended field trials are needed for a recommendation.

Keywords: Rice blast, *Ocimum tenuiflorum*, Inhibition, Organic rice production, *Oryza sativa*

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