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Comparison of the Fungicide Sensitivity of the Two Fungal Species: *Rigidoporus microporus* and *Phellinus noxius*: the Causal Organisms of the Two Major Root Diseases of Rubber in Sri Lanka

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Abstract

White root disease caused by *Rigidoporus microporus* and the brown root disease, caused by *Phellinus noxius* are the two major root diseases of Sri Lankan rubber cultivations. In order to be used in a collective approach towards both diseases, a comparison of the fungicide sensitivity of the two pathogens was intended in the study. *In vitro* screening of two potential fungicides namely: tebuconazole and hexaconazole was carried out using the poisoned food technique. One isolate from each pathogen was selected to have the highest pathogenicity level among the respective isolate collections. The experiment was carried out in a completely randomized design with four replicates in each treatment. A series of concentrations: 0.1, 5, 10, 25, 50 and 100 ppm, was used to identify the sensitivity levels of the respective fungicide towards the two pathogen species and sterilized distilled water was substituted for the fungicide in the control sets. After an incubation period of 4 days at room temperature, the percentage inhibition of the respective fungus over the control was observed in each culture plate. On tebuconazole, *P. noxius* showed no growth at any of the tested concentrations. However, *R. microporus*, exhibited a mycelial growth up to the 10 ppm concentration. Though no growth was observed at the concentration of 25 ppm, *R. microporus* could resume its growth when the fungal disk was transferred back to the growth medium. However, when exposed to concentrations 50 ppm or above, the fungus could not resume its growth in fungicide free medium. With hexaconazole, too, *P. noxius* showed no growth at any of the tested concentrations, while *R. microporus* grew up to the 10 ppm concentration. Though *R. microporus* exhibited no mycelial growth on the culture plate at the concentration of 25 ppm, a slight growth of the fungus was observed on inoculated discs after the incubation period. However, even at the 100 ppm concentration, *R. microporus* could resume its growth when transferred back onto fungicide free MEA. Therefore, it can be concluded that, when the two particular fungal isolates are considered, *P. noxius* shows high sensitivity than *R. microporus* towards the both tested fungicides.

Keywords: *Rigidoporus microporus*, *Phellinus noxius*, Fungicide sensitivity, Poisoned food technique