

**MORPHOLOGICAL FEATURES IDENTIFICATION AND
IN-VITRO SCREENING OF CHEMICAL FUNGICIDES
AGAINST *Rigidoporous microporus* THE CAUSAL AGENT
OF CINNAMON WHITE ROOT DISEASE**

16/12/2021
Signature of the Candidate

A dissertation submitted to the
Faculty of Animal Science and Export Agriculture
Uva Wellassa University
In partial fulfillment of the requirements for the award of
Bachelor of Science in Export Agriculture

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2021

ABSTRACT

Rigidoporus microporus is a wood invasion fungi that causes white root disease in cinnamon (*Cinnamomum zeylanicum* Blume) which is considered as a lucrative commercial crop in Sri Lanka. This pathogen has the ability to degrade wood by decomposing lignified cell walls using hydrolytic and oxidative enzymes. *Rigidoporus microporus* is able to survive in soil with the absence of wooden substrates. The white root disease has spread throughout the country's cinnamon growing regions by causing yield losses which eventually leading to economic loss. This disease was mainly identified in the cinnamon plantations where rubber had grown previously. Although this disease causes significant economic loss towards the cinnamon, information regarding the disease, causal organism and control measures are lacking. This study was conducted to identify the morphology of *Rigidoporus microporus* and in-vitro screening of inhibitory activity of selected fungicides against the causal agent. Sulfur, tebuconazole and hexaconazole were used as the fungicides. *Rigidoporus microporus* was isolated from the infected roots of cinnamon. Isolated fungus was cultured in PDA at 28 ± 2 °C and the morphological characters were observed after seven days. White colour fibrous fungal mycelium was observed in infected roots which was firmly attached to the bark of the root. On cultured plate fully grown circular shaped, white color dense fibrous mycelium was observed with many branching like structures. Under the compound microscope, threadlike network was observed with a hyaline septate hyphae and clamp connections. Under, *in-vitro* evaluation of the fungicides, maximum inhibition of the fungal growth was observed in the tebuconazole & hexaconazole whereas minimum growth inhibition of the colony was observed in sulfur. In this study morphological features of *Rigidoporus microporus*, the causative organism of cinnamon white root disease were identified and evaluated the effectiveness of systemic fungicides against the pathogen. . Tebuconazole & hexaconazole were highly effective against the causal agent (*Rigidoporus microporus*) of cinnamon white root disease.

Keywords: Cinnamon; Fungicide; Morphology; *Rigidoporus microporus*; White Root Disease