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| Effect of Selected Essential Oils on Colletotrichum musae Causing Anthracnose in Banana (Musa spp L.CV. Seeni Kesel Banana) |
| Abstract Body | Banana (Musa spp L.CV. Seeni Kesel) has high nutritional and economical value. Postharvest disease anthracnose is one of the most distributed and devastating diseases of bananas, especially at the ripening stage. The application of synthetic fungicides is a common practice for controlling postharvest disease. However synthetic fungicides applications badly affect human health due to chemical residues. Therefore, searching for alternative measures for the control of anthracnose is essential. To determine the causative agent, fungal isolation was done from symptomatic fruits and fungi were identified by morphological features compared with available literature. Cinnamon leaf oil, Nutmeg oil, Black pepper oils were used as essential oils in in vitro fungicidal assay to assess their ability to control the pathogen. The mycelial growth inhibitory capacity of five concentrations (1200 μL/mL-1, 1400 μL mL-1, / 1600 μL/mL-1, 1800 ml-1/μL, 2000 μL/mL-1) of black pepper oil, six concentrations (400 μL/mL-1, 600 μL/mL-1, 800 μL/mL-1, 1000 μL/mL-1, 1200 μL/mL-1, 1400 μL/mL-1) of cinnamon leaf oil and six concentrations (200 μL/mL-1,400 μL/mL-1, 600 μL/mL-1, 800 μL/mL-1, 1000 μL/mL-1, 1200 μL/mL-1) of nutmeg oils were assessed using in vitro disc volatilization method. The identified causative agent was *Colletotrichum musae*. Cinnamon leaf oil (1400 μL/mL-1) and Nutmeg oil (1200 μL/mL-1) concentration showed 92.59 % and 92.59 % inhibition of radial mycelia growth against the pathogen which is significantly (p < 0.05) different from other concentrations tested. Black pepper oil ranges from 1400 - 2000 μL/mL-1 concentrations did not show significant difference (p > 0.05) compared to the negative control treatment. These results suggest that there is a potential to use cinnamon leaf (1400 μL/mL-1), nutmeg (1200 μL/mL-1) and black pepper oil (2000 μL/mL-1) concentrations as alternatives to control banana anthracnose in *in vivo* conditions. ~~to control anthracnose in banana~~. |