HPC fingerprints and In vitro antimicrobial activity of syringic acid, caffeic acid and 4-hydroxybenzoic acid against Ganoderma boninense

Abstract

his study discusses the in vitro antimicrobial activity and fungitoxicity of syringic acid, caffeic acid and 4-hydroxybenzoic acid which is found in oil palm root. The presence of these phenolics were first confirmed with the injection of standards using HPLC in a gradient system developed with methanol and 0.1% phosphoric acid. Experiments were observed for fourteen days, repeated at least three times and data were recorded daily. The antimicrobial activities and fungitoxicity of the phenolics against Ganoderma boninense were expressed in inhibition of radial growth of G. boninense on PDA ameliorated with the three different phenolics with a range concentration of 0.5-2.5 mg mL⁻¹. Syringic acid was found to be very fungitoxic to G. boninense even at concentration of 0.5 mg mL-1, the lowest concentration tested in this experiment. When the concentration is increase to 1.0 mg mL⁻¹ of syringic acid, the pathogen is inhibited. Caffeic acid and 4-hydroxybenzoic acid were having inhibitory effect with the highest concentration tested; 2.5 mg mL⁻¹ strongly inhibited the growth of G. boninense in comparison to the control.