The changes of oil palm roots cell wall lipids during pathogenesis of *Ganoderma boninense*

ABSTRACT

One of the first physical defences of plants against fungal infection is their cell wall. Interaction between combinations of metabolism enzymes known as the "weapons" of pathogen and the host cell wall probably determines the fate of possible invasion of the pathogen in the host. The present work aims to study the biochemical changes of cell wall lipids of oil palm roots and to determine novel information on root cell wall composition during pathogenesis of Ganoderma boninense by using Gas Chromatography Mass Spectrometry. Based on Total Ion Chromatogram analysis, 67 compounds were found more abundant in the roots infected with G. boninense compared to the healthy roots (60 compounds). Interestingly, nine new compounds were identified from the cell wall lipids of roots infected with G. boninense. These includes Cyclohexane, 1,2-dimethyl-, Methyl 2-hydroxy 16-methyl-heptadecanoate, 2-Propenoic acid, methyl ester, Methyl 9-oxohexacosanoate, 5-[(3,7,11,15-Tetramethylhexadecyl) oxy]thiophene-2carboxylic acid, Ergosta-5,7,22,24(28)-tetraen-3beta-ol, 7-Hydroxy-3',4'-methylenedioxyflavan, Glycine and (S)-4'-Hydroxy-4-methoxydalbergione, this may involve as response to pathogen invasion. This paper provides an original comparative lipidomic analysis of oil palm roots cell wall lipids in plant defence during pathogenesis of G. boninense.