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Infection Induced Alteration in Oil Palm Leaf Metabolites

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A metabolite profiling approach based on ^{1}H NMR was used to investigate time-dependent metabolic changes during *Ganoderma boninense* (Gb) infection in oil palm leaf samples. Leaf samples taken in every month starting from 3 month old seedlings were flashed frozen in liquid nitrogen at sampling site and were later subjected to grinding, extraction in CD_3OD + 0.05%(v/v) TMS and filtration procedures to obtain less polar metabolites. Using biostatistical analysis, differences between non-Gb inoculated and Gb inoculated samples were found to be insignificant, similarly with the phenotypic observation for both. However, disease progression analysis indicated the up-regulation of amino acid compounds such as 2-aminobutyrate, carnitine, glutamate and *O*-acetylcarnitine and down regulation of sugar and some organic acid compounds throughout the 5 months post infection (mpi). Further understanding of each compound related to plant disease signaling is under investigation.

Keywords: Oil palm, *Ganoderma boninense*, ^{1}H NMR, Amino acids, Sugars.