

On the possibility of using FTIR for detection of Ganoderma Boninense in infected oil palm tree

Abstract

Ganoderma boninense is a basidiomycetes fungus that causes basal stem rot disease (BSR) in oil palm trees. In Malaysia alone, the loss caused by this disease was estimated between RM 225 Million to RM 1.5 Billion in 2011 by Malaysian Palm Oil Board. Unfortunately, many planters do not realize that their fields were infected with BSR until it is too late. Several methods have been proposed for early detection of Ganoderma boninense infection. In this paper, Fourier transform infrared spectroscopy (FTIR) is investigated as a tool to detect the presence of Ganoderma boninense in oil palm tree. It is shown that there are differences in the FTIR result from the infected and healthy oil palm tree that resembles the FTIR characteristics from pure Ganoderma boninense. The result presented in this paper shows the possibility of FTIR as a tool for detecting the infection of the fungi in oil palm tree.