Ganoderma species of basal and upper stem rots in oil palm (elaeis guineensis) in Sarawak, Malaysia

ABSTRACT

Oil palm is one of the most important plantation crops in Malaysia. The sustainability of oil palm is threatened by Ganoderma species. It is commonly known that Ganoderma boninense is the causal pathogen for basal stem rot (BSR) in oil palm. However, little is known about the threats by other species of Ganoderma or upper stem rot (USR), which is associated with a similar pathogen. A total of 46 isolates of Ganoderma were isolated from BSR and USR infected oil palms. The isolates were identified using a multiplex PCR, and its genetic heterogeneity was determined using a somatic compatibility test. It was found that BSR and USR coexisted in the plantations, and USR emerged as one of the major diseases. The diseases were associated with similar pathogens, namely G. zonatum (71.7%), followed by G. boninense (26.1%), and G. miniatocinctum (2.2%). Somatic compatibility test indicated that all the isolates were genetically heterogeneous. These results show that G. zonatum and the transmission of the diseases through basidiospores play a vital role in the epidemiology of the diseases. Thus, USR should not be overlooked, and more emphasis should be given to G. zonatum and its mode of transmission for more effective disease management.