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Ganoderma Infection in Acacia mangium: Difference of Plant Hosts to Virulency of Ganoderma

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Abstract : Acacia (Acacia mangium) is a forest plant species which is produced to pulp and paper. The high demand for pulp and paper increase the acacia plantation forest area. However, the outbreak of Ganoderma (root rot pathogen) infection becomes obstacles for the development of acacia plantations. This is due to the extent of host range and species of Ganoderma. Ganoderma has also the ability to survive the long-term without hosts. The diversity of the host and Ganoderma species affects its virulence. Therefore, this study aimed to determine the virulence of Ganoderma from different hosts (acacia, palm oil (Elaeis guineensis) and rubber (Hevea brasiliensis)). The methods were isolation and morphology identification of Ganoderma, and inoculation of Ganoderma isolates on acacia seedlings. The results showed that the three isolates of Ganoderma from different hosts had a morphological similarity with G. Lucidum (according to Ganoderma isolated from acacia or G1), G. boninense (according to Ganoderma isolated from palm oil or G2) and G. applanatum (according to Ganoderma isolated from rubber or G3). Symptoms of infection in acacia were seen at 3 months of age. The symptoms were begun with chlorosis, necrosis and death of seedlings (such as burning). Necrosis was started from the tip of the leaf. Based on this visible symptoms, G1 was moderate virulence isolate and G2 was low virulence isolate while G3 was avirulen isolate. The symptoms were still growing in accordance with the development of plant so it affected the value of diseases severity index. Ganoderma infection decreased the dry weight of seedlings, ie. 3.82 g (seedlings that were inoculated by G1), 4.01 g (seedlings that were inoculated by G2); and 5.02 g (seedlings that were inoculated by G3) when the dry weight of seedlings control was 10,02 g. These results provide information for early control of Ganoderma diseases on acacia especially those planted near rubber and oil palm crops.

Keywords : Acacia, Ganoderma, infection, virulence
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