POTENTIAL USE OF CRUDE AQUEOUS EXTRACT OF *Amaranthus viridis* AGAINST IMPORTANT FUNGAL PATHOGENS ON PLANTATION CROPS

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ABSTRACT

POTENTIAL USE OF CRUDE AQUEOUS EXTRACT OF *Amaranthus viridis* AGAINST IMPORTANT FUNGAL PATHOGENS ON PLANTATION CROPS

Some important diseases on plantation crops that have been reported in Malaysia were rice blast disease caused by fungal pathogen *Magnaporthe oryzae*, Ganoderma basal stem rot caused by *Ganoderma boninense*, *Colletotrichum* secondary leaf fall caused by *Colletotrichum gloeosporioides* and black pod rot caused by *Phytophthora capsici*. All those major fungal diseases in plantations are becoming a constraint condition to the farmers in the agricultural sectors to obtain high productivity of yields. The diseases could cause severe damage in plantations and lead farmers to use chemicals. The objectives of the study were to evaluate antifungal activity of crude aqueous extract from the leaves of *Amaranthus viridis* and to develop an eco-friendly control method for managing major fungal diseases in plantations. In this study, crude aqueous extract of *A. viridis* was evaluated for mycelial growth inhibition or antifungal activity against the fungal pathogens through poisoned food technique. The inhibition percentage was calculated by measuring the radial growth of the fungi grown on control and amended potato dextrose agar plate (PDA) with weed extract. Different responses observed against plant pathogenic fungi. The highest percentage of mycelial growth inhibition was observed for *G. boninense* with 64.60%. While the second-highest inhibitory effect belonged to *M. oryzae* with 29.57% and the third *C. gloeosporioides* with 12.27%. In contrast, the crude aqueous weed extract could induce stimulatory growth effect for *P. capsici* with -3.68%. In conclusion, we suspected that the weed extract can be used an effective alternative fungicide or biological control option for the management of Ganoderma attacks in oil palm plantations.

Keyword: Fungal pathogen, major crop, antifungal activity, *Amaranthus viridis*