

Title Effects of oil palm empty fruit bunch biochar soil amendment on postharvest quality of *Amaranthus viridis*

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Citation Abstracts of 7th International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

Keywords Amaranthus; oil palm

Abstract

Application of biochar soil amendment is gaining interest due to its potential for carbon sequestration and greenhouse gasses emission reduction for climate change mitigation (Lehmann *et al.* 2003; Steinbeiss *et al.*, 2009; Zhang *et al.* 2010). Biochar have also been reported to improve soil properties by aiding in the retention of soil water and fertilizer nutrients and reducing leaching and surface run-off (Glaser *et al.*, 2002). While the effects of biochar soil amendment on crop yield and soil properties were widely reported, very little is known about its effects on the postharvest quality of leafy vegetable. A field experiment was conducted in Universiti Putra Malaysia using different rates of oil palm empty fruit bunch biochar soil amendment: 0 (control), 10, 20 and 30 t/ha. *Amaranthus viridis* seed were sowed in seed trays and transplanted 14 days later onto beds measuring 1.5m by 2.0m with planting distance of 10cm between plants and 30cm between rows. Fertilizer was given at the recommended rate of 100kg N: 100kg P: 100kg K per hectare. Harvesting was done 30 days after sowing and tissue samples were collected for postharvest quality analysis (colour, firmness, titratable acidity, soluble solids content and pH). The experiment was repeated for two crop cycles. In the first crop cycle, pH is significantly higher in treatment with biochar soil amendment compared to the control. Treatment with 30t/ha biochar soil amendment shows significantly higher ascorbic acid content compared to the other treatments. However, no there was no significant difference in all of the parameters measured for the second crop cycle. Further studies are needed to establish the effect of biochar soil amendment on the crop's postharvest quality.