

**UV-C irradiation affects quality, antioxidant compounds and activity of Musa AAA  
Berangan**

**ABSTRACT**

A study to determine the effects of ultraviolet-C (UV-C) irradiation on fruit quality, antioxidant compounds and activities of Musa AAA Berangan was carried out. The mature green fruits were exposed to UV-C doses of 0, 0.01, 0.02, 0.03 and 0.04 kJ/m<sup>2</sup> and allowed to ripen at 25±2o C for 5 days. Peel and pulp color, water loss, firmness, soluble solids concentration (SSC), titratable acidity, pH, vitamin C, total phenolic contents (TPC) and antioxidant activity (assay using ferric-reducing antioxidant power (FRAP), 1,1-diphenyl-2-picrylhydrazyl (DPPH) and 2,2'-azinobis-(3-ethyl-benzothiazoline-6-sulfonic acid) (ABTS) free radical-scavenging) were analyzed at day 0, 1, 3 and 5 after ripening. The peel color (L\*, C\* and ho ) of Berangan banana decreased as UV-C irradiation dose increased. UV-C irradiated fruit has lower water loss, firmer pulp and lower SSC than control. The fruit could undergo normal ripening albeit the quality of fruit has been affected by UV-C irradiation. There was significant interaction between UV-C radiation x day after ripening on TPC of Berangan banana. Fruit irradiated with UV-C showed significant higher of TPC as compared with control at later stage of ripening. Antioxidant activities measured with the three assays showed a significant decrease as ripening progressed. The results of this study showed that UV-C radiation as low as 0.01 kJ/m<sup>2</sup> is able to reduce water loss, slow down starch conversion and softening and enhanced TPC of Berangan banana.

**Keyword:** Firmness; Peel and pulp color; Soluble solids concentration; Vitamin C