

## Controlling Musa AAA Berangan crown rot disease using UV-C irradiation

### ABSTRACT

Crown rot, caused by complex pathogen, is the most serious postharvest problem in bananas. UV-C irradiation has the potential to be used as an alternative method to reduce our dependence on postharvest agrochemicals due to its germicidal properties. It could also promote resistance against pathogens. The aim of this work was to evaluate the in vitro effects of UV-C on three major fungi isolated from Berangan banana, namely: *Lasioidiplodia theobromae*, *Colletotrichum musae* and *Fusarium* spp., and to evaluate the potential of UV-C in controlling crown rot disease on naturally infected banana. The applied UV-C doses varied from 0.01 to 0.30 kJ m<sup>-2</sup> and the treatment condition was under the ambient temperature (28±2°C). Mycelial growth, sporulation intensity and conidial germination of each fungus were evaluated in vitro after fungal exposure to different UV-C doses. Mature green banana was exposed to UV-C to examine the effects of UV-C on disease incidence, severity, colour and texture of the fruit crowns. The disease incidence and severity were carried out after ripening initiation using 1 mL L-1 ethylene for 24 h. The fruits were then allowed to ripen at 27°C/85% relative humidity and observations were carried out at day 0 (before ripening initiation), 1, 3, 5 and 7 (after ripening initiation). UV-C irradiation effectively controlled the mycelial growth, sporulation and conidial germination of the isolated fungal pathogen at dose 0.015 kJ m<sup>-2</sup>. UV-C irradiation was able to control the severity of crown rot disease on Berangan banana at a satisfactory level when irradiated at dose of 0.01 kJ m<sup>-2</sup>. Hence, UV-C irradiation could be used as an alternative to chemical fungicides for management of crown rot disease. was contributed towards prevalence of depressive symptoms among the elderly.

**Keyword:** Musa AAA Berangan; Crown rot disease; UV-C irradiation; Banana