

EXTENDING THE SHELF LIFE OF TJC MANGO (*Mangifera indica*) BY THE APPLICATION OF 1-METHYLCYCLOPROPENE (1-MCP)

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Mango (*Mangifera indica*) is a climacteric and highly perishable fruit. Cultivar TomEJC (TJC) is an emerging mango variety that has a huge potential in the local and export markets due to its high quality. It requires specialized postharvest handling to extend storage life. This study was conducted to extend the shelf-life of TJC mango through the application of 1-MCP. Four dosages (1ppm and 12h, 2 ppm and 12 h, 1 ppm and 24 h, 2 ppm and 24 h) were tested with the control and stored at 14°C and 85-90% RH. The flesh colour, firmness, total soluble solids (TSS), pH, weight loss, rate of respiration and ethylene production were measured at the beginning of the storage study and during the storage at four days intervals. Application of 1-MCP showed a significant effect ($p < 0.05$) on the flesh colour, firmness, TSS, pH, respiration and ethylene production. Initial a^* value in the flesh changed from -7.660.41 to -7.490.83, -5.751.69, -6.660.40, -2.652.31, -0.311.99 and initial b^* value 49.351.14 changed to 43.871.17, 49.681.44, 49.370.85, 55.492.12, 57.911.02 in treated samples and control respectively on 17d in storage. TSS changed from 6.830.06 to 15.10.1, 15.30.1, 15.30.1, 12.80.1 and 19.61.0. pH changed from 3.340.06 to 3.440.07, 3.430.08, 3.720.05, 4.080.08, 4.200.08 in samples while firmness decreased from 107.181.24 to 57.351.05, 91.731.30, 60.160.10, 32.720.68, 33.151.05 in the treated samples and control respectively in 17d storage. Physiological weight-loss percentage of the treated samples and the control was not significantly different ($p > 0.05$) on 17d in storage. According to the sensory evaluation and TSS, treating TJC mango with 1-MCP was found to be successful in delaying of ripening since it extended the shelf life of mango from about 10d than the untreated mango. This study concluded that application of 2 ppm of 1-MCP for 12h could be recommended to extend the shelf life of TJC mango as it keeps the mango in good quality during one month of cold storage.

Keywords: 1-MCP, Quality, Respiration rate, Shelf life, TJC mango