EFFECT OF HARVESTING MATURITY ON POSTHARVEST QUALITY OF PURPLE PASSION FRUIT (*PASSIFLORA EDULIS* SIMS CV. DAINONG 1) DURING AMBIENT STORAGE

Thi Nga Vu[1,2], Adisak Joomwong[1,3],Parichat Theanjumpol[1,3], Thi Tu Quynh Nguyen[1,2], Manh Hieu Nguyen[1,2], Jurmkwan Sangsuwan[4*]
[1]Postharvest Technology Research Center, Faculty of Agriculture, Chiang Mai University, Chiang Mai 50200, Thailand
[2]Viet Nam Institute of Agricultural Engineering and Post-Harvest Technology, Ha Noi 100000, Vietnam
[3]Postharvest Technology Research Center, Faculty of Agriculture, Chiang Mai University, Chiang Mai 50200, Thailand
[4]Faculty of Agro-Industry, Chiang Mai University, Chiang Mai 50100, Thailand

**Corresponding Author Email: jurmkwan@gmail.com*

Abstract

This study evaluated the quality of purple passion fruit (*Passiflora edulis* Sims cv. Dainong 1) harvested at five maturity stages: S1 (0–5% purple), S2 (6–25% purple), S3 (26–50% purple), S4 (51–75% purple) and S5 (76–100% purple) after storage at ambient temperature (25±1ºC). Passion fruit quality parameters including firmness, weight loss, shrinkage index, decay index, color, total soluble solids (TSS), titratable acidity (TA), vitamin C content, peel pigment content (chlorophyll and anthocyanin) and sensory characteristics were analyzed. The results showed that the maturity stage significantly affected fruit quality during storage. Fruit firmness, TA, chlorophyll, L*, b* and hue angle significantly decreased as the fruit ripened from stage S1 to S5, and also declined over the storage period. The passion fruits harvested at S4 stage (51–75% purple) exhibited good initial quality, with high TSS, high vitamin C content, and high sensory scores, along with low TA. After 12 days of storage, fruits harvested at S4 stage demonstrated the best storage potential, maintaining high levels of TSS, vitamin C, firmness, and color, while showing lower TA, weight loss, decay and shrinkage. In addition, the fruit harvested at S4 obtained the best overall sensory score throughout the entire storage period. It can be concluded that the purple passion fruit should be harvested when the peel color has reached 51-75% purple to ensure optimal postharvest quality and extended storage duration.

Keyword: purple passion fruit, harvest maturity, postharvest quality, storage.