

Title Development of postharvest techniques for persimmon fruits of Thachthat variety grown in the north of Vietnam

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Abstract

Locally Thachthat astringent persimmon is the leading variety in Vietnam. Although its cultivated area and production were remarkably expanded for the last 15 years, the handling techniques for persimmon remain unchanged. Fruits are harvested at full maturity stage when almost the whole fruit surface turned yellow. All fruits are then subject to immediate ripening with calcium carbide (CaC_2) or other traditional methods. This study aimed to develop appropriate postharvest techniques for fresh Thachthat persimmon, including maturity index, packaging, astringency removal and ripening. The effect of color-based maturity on persimmon postharvest quality and shelf life was evaluated as follows: fruits were harvested at 3 maturity stages, numbering from I through III according to their skin color development, put in 0.06 mm thick PE bag and held in room temperature. Results showed that fruits harvested at earlier stage of maturity can be stored for longer time than that of late stage of maturity. The maximum of shelf life of 60-80 days has been obtained in fruits with maturity I, while maturity II and III, only 50 and 15-30 days respectively. For the purpose of developing appropriate ripening technique, there are two sets of experiments were conducted. Soaking the fruits in ethrel solution of 2.0, 3.0, and 4.0‰ for 10 min. and dipping the fruit stem ends with ethrel solution of 50, 75, and 100%. Results indicated that fruit ripening by soaking in ethrel solution of 3.0‰ for 10 min. is the most promising technique. To identify the appropriate packaging option for persimmon, fruits of maturity II were put in PE or HDPE bags with or without perforation or wrapped with news papers. The results indicated that fruits covered by 0.06 mm PE film can be stored up to 60 days with less than 10% decay rate. Fruits quality is considered to be satisfactory with typical red color and sweet taste. More importantly, soluble tannin content of the fruits treated with 3.0‰ ethrel solution for 10 min., kept at temperatures varied from 35 to 42°C for 20 h, and held afterward for ripening in ambient conditions was reduced remarkably. Fully ripe fruits do not have bitter taste of astringency at all. The results have also indicated that 40°C was the most appropriate temperature for persimmon astringency removal. Almost the same effect has been obtained with the fruits treated with 0.2% ethanol (99.7°) for 8 h and kept at 40°C. In this case, the quality of the ripe fruits showed slightly better.