Abstract:

Seven-year-old ‘Ponkan’ mandarin (Citrus reticulate) Blanco)on trifoliate rootstocks (Poncirus triforliata L.) were employed monitor as to the changes of endogenous polyamines (PAs) and salicylic acid (SA) concentrations pre- and postharvest, and correlated to postharvest storage life. The results showed that endogenous concentrations of free polymines and SA peaked in October at a maximum of 1,233 nmolxg-1FW and 2,150 ngxg-1FW, respectively. Then declined gradually during postharvest storage. The decline paralleled observed peel senescence. Fruits harvest in December were dipped into 100 mgxL-1 putrescine (Put), spermidine (Spd), spermine (Spm), and 400 mgxL-1 SA, with distilled water as the control and stored for 3 months. Dipping elevated endogenous concentrations Pas and Sa, and the postharvest storage life was prolonged. Except Put, all treatments resulted in the higher concentrations of endogenous Pas and SA in treated fruits compared to the control. During 3 months storage, SA had 2.0% decay, 3.5% for Spm, 4.0% for Spd, and 6.4% for Put treatment. Weight loss for the treated fruit was 3.0% Spm, 3.5% for SA and Spd, and 5.3% for Put treatment. Control fruit showed 13.5% decay and 11.0% weight loss during 3 months period of storage. The application of PA and SA increased endogenous polymine (PA) and SA concentrations, which led to an improvement in fruit quality and prolonged storage life. SA, Spm, and Spd treatments were better than a Put treatment.