Preharvest calcium applications improve postharvest quality of papaya fruits (Carica papaya L. cv. Eksotika II)

ABSTRACT

This research was conducted to evaluate the effects of calcium chloride ($CaCl_2$) and calcium nitrate $Ca(NO_3)_2$ on nutrient concentrations and postharvest quality of papaya fruits. In the first experiment, plant stem height increased significantly after $Ca(NO_3)_2$ application compared to $CaCl_2$. The calcium content in the peel and pulp for both sources [$CaCl_2$ and $Ca(NO_3)_2$] significantly rose with increasing calcium concentrations, but there was a significantly higher content of calcium in fruit peel and pulp in the $CaCl_2$ treatment. Magnesium and potassium in fruits decreased with increasing calcium concentrations. A reduction in anthracnose lesion diameter in the infected fruit with increasing calcium was observed in both $CaCl_2$ and $Ca(NO_3)_2$ treatments. Ethylene production in fruits decreased with increasing calcium concentrations. In the second experiment, only $CaCl_2$ was used as the calcium source, and results showed that the calcium content in fruit peel and pulp significantly increased at higher $CaCl_2$ levels, whereas ethylene production, anthracnose lesion diameter, and magnesium content decreased compared to control.

Keyword: Anthracnose; Calcium chloride; Calcium nitrate; Papaya; Postharvest quality