

Title Role of calcium on internal browning of pineapples
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Abstract

Internal browning of pineapples limits storage life and transportation potential at low temperature. Queen and Smooth cayenne pineapples harvested from Chiangrai, Rayong, Trad and Nakhon Pathom provinces, had total calcium content in the pulp and cor determined and then were stored at 10°C for 21 days. It was found that Queen pineapple had higher total calcium content but developed more internal browning than that in Smooth cayenne pineapples. However, within the same pineapple type, total calcium contents were negatively correlated with internal browning. The effect of pre-harvest and post-harvest calcium applications on internal browning of 'Trad-see-thong' (Queen type) pineapple was also determined. Pineapples were sprayed with 1000 mg/L calcium-boron solution combined with 150 kilograms per hectare of calcium oxide exhibited 47.6% internal browning reduction. However, in another experiment the calcium application was not effective for the internal browning reduction. On a postharvest study, calcium applications by immersion of pineapple fruit stems in 0, 1, 2 and 4% calcium chloride solutions at 25°C (80-85% RH) for 18 hours had 35, 77 and 79% internal browning reduction, respectively. However, 2 and 4% calcium chloride solutions caused a dark brown area in the fruit stem, which extended 2.5 centimeters into the core. Repeated experiments could not confirm the result. It was suggested that calcium content was only one of the factors influencing internal browning in pineapples. Further study need to be conducted for confirmation of the finding.