

## Effects of Heat Treatment on Softening and Anthracnose Resistance in Mango Fruits cv. 'Nam Dok Mai'

Marilou Mante Benitez\*

### Abstract

Effects of heat treatment by hot water dip (HWD) on the physiological and enzymatic changes associated with softening and disease resistance in 'Nam Dok Mai' mango fruits were evaluated. Results revealed that HWD retarded softening due to reduced activities of pectinmethylesterase and polygalacturonase in both peel and pulp tissues. Other physiological changes during ripening were also slowed down resulting to improved shelf life. HWD at 55°C for 5 min was more effective in eliciting the effects than at 50°C, 5 min. HWD at 55°C also minimized anthracnose incidence in both *Colletotrichum gloeosporioides*- inoculated and non-inoculated fruits due possibly to changes in activities of pathogenesis enzymes. The heated fruits had increased  $\beta$ -1,3 glucanase and phenylalanine ammonia-lyase activity which correlated well with the disease resistance. Determination of protein synthesis pattern by SDS-gel electrophoresis revealed that heated fruits produced a new band of protein after 1 hour of incubation with molecular mass approximately 90 kDa compared to non-heated fruits.

---

\* Master of Science (Postharvest Technology), Faculty of School of Bioresources and Technology, King Mongkut's University of Technology Thonburi. 110 pages.