CHAPTER 6

Conclusion

1. SA and MJ reduced CI symptoms in Nam Dok Mai No. 4 mango during storage at 5 °C for 42 days. Treatments with 0.1 and 1 mM SA and 0.1 mM MJ significantly reduced CI by 20, 70 and 20% respectively. SA and MJ did not affect fruit quality including TSS, TA, firmness, weight loss and disease index at 5 °C storage and fruit quality when ripe, except for color, they significantly maintained more brightness than the control after 28 days of storage. SA and MJ maintained and prolonged the storage life of mango with high consumer acceptance. SA at 1 mM was the best concentration for reducing CI and maintaining fruit quality of Nam Dok Mai No. 4 mango during storage at 5 °C.

2. SA and MJ reduced ROS accumulation such as $O_2^{\bullet -}$, H_2O_2 and $OH^{\bullet}$ in the exocarp and mesocarp of Nam Dok Mai No. 4 mango during storage at 5 °C for 42 days. They also reduced membrane damage by lowering LOX activity, MDA content and EL in the exocarp and mesocarp. SA at 1 mM was the best concentration for reducing ROS accumulation and membrane damage of Nam Dok Mai No.4 mango during storage at 5 °C. Treatment with 1 mM SA showed the maximum reduction in $O_2^{\bullet -}$, H_2O_2 and $OH^{\bullet}$ contents in the exocarp (41, 51 and 47% respectively) and mesocarp (47, 67 and 51% respectively). It also showed the maximum reduction in LOX activity, MDA content and EL in the exocarp (43, 31 and 25% respectively) and mesocarp (31, 36 and 21% respectively).

3. SA and MJ enhanced antioxidant defense system in the exocarp and mesocarp of Nam Dok Mai No. 4 mango resulting in the reduction of CI during storage at 5 °C for 42 days. They increased SOD, CAT and APX activities, total phenolic content and TAC in mango. SA and MJ maintained high levels of ascorbic acid and glutathione. SA at 1 mM was the best concentration for enhancing the antioxidant

defense system and for promoting gene expression of SOD, CAT and APX which associated with an increase in their antioxidative enzyme activities during storage at 5 °C. Treatment with 1 mM SA showed the maximum stimulation in SOD, CAT and APX activities in the exocarp (176, 110 and 140% respectively) and mesocarp (112, 123 and 132% respectively). This treatment also showed the maximum increase in expression of *SOD*, *CAT* and *APX* genes (99, 91 and 69% respectively). The expression of these genes was highly correlated with their enzyme activity (R^2 = 0.879, 0.678 and 0.866 respectively).