

CHAPTER 6

CONCLUSION

1. The findings obtained in the present study show that UV-B dosage of at 19.0 kJm^{-2} effectively retarded the degradation of Chl in lime fruits during storage. The reduction of Chl-degrading enzyme activities such as Chlase, Chl-POX, MDS and PPH were also suppressed by UV-B treatment, indicating that the suppression of those enzyme activities by UV-B treatment could be involved in retardation of Chl degradation in stored lime fruits. Furthermore, UV-B treatment maintained the internal quality as citric acid and malic acid contents and greatly reduced the level of glucose, fructose and sucrose contents. Finally, UV-B treatment has an inductive effect on stomatal closure in lime fruit peel. We suggest that UV-B treatment could be a useful method to prolong postharvest senescence and quality of lime fruit during storage at 25°C .

2. These results suggest that heat treatment such as hot water at 50°C for 5 min effectively retarded the Chl degradation in Thai lime fruit during storage. Hot water treatment at 50°C for 5 min also suppressed activities of Chl-degrading enzymes, such as Chlase, Chl-POX, Mg-dechelation, and PPH, indicating that the inhibition of those enzyme activities by heat treatment could be involved in the retardation of Chl degradation in stored lime fruit. Furthermore, hot water treatment at 50°C for 5 min reduced the physiological changes such as ethylene production and respiration rate during storage. Hot water treatment at 50°C for 5 min induced a gradual increase in titratable acidity and suppressed the increase of total soluble solid during storage. We

conclude that hot water treatment at 50 °C for 5 min could be a useful method to prolong the postharvest quality of Thai lime fruit during storage.