Ripening quality of kiwifruit cultivars is affected by harvest time

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Abstract

In this study, green 'Hayward', gold 'Haegeum' and red 'Hongyang' kiwifruit cultivars were harvested at 160, 170 and 180 days after full bloom (DAFB) and treated with 100 μL kg^{-1} ethylene to investigate the ripening quality at 25 °C. Significant ($p < 0.05$) interaction effects between cultivars and harvest times on firmness and firmness related parameters, biochemical parameters, physiological parameters, and overall sensory quality were observed during the study. The results of our study revealed that the ripening quality of kiwifruit cultivars could be influenced by harvest time. During ripening, similar increasing trends were observed for sucrose, glucose, fructose, and total simple sugars until 4 d ripening and maintained or slightly reduced afterward, irrespective of cultivar and harvest time. In addition, based on firmness and firmness related parameters (respiration rate, ethylene production rate, pectins and polygalacturonase (PG) activity), eating quality was attained by gold 'Haegeum' and red 'Hongyang' on the 2nd day of ripening, whereas green 'Hayward' attained eating quality on the 4th day, irrespective of harvest time. However, based on the lowest weight loss to attain eating quality during ripening, which avoids the risk of shriveling, we suggest to harvest red 'Hongyang', gold 'Haegeum' and green 'Hayward' at 160, 170 and 170 DAFB, respectively. The shortest possible harvest time without compromising quality, as observed in this study, could also help growers to reduce production cost and it assists further distributions to consumers.