

Title Within-vine variation in maturity parameters and storage potential of 'Hort16A' (ZESPRI™ GOLD) kiwifruit grown in Italy

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Abstract

Increasing volumes of Italian-grown ZESPRI™ GOLD Kiwifruit (the commercial name under which fruit of *Actinidia chinensis* 'Hort16A' are sold) will lead to longer storage requirement for this fruit. Previous work has linked maturity at harvest to key storage disorders for 'Hort16A' fruit such as chilling injury, physiological pit and rots. Currently fruit from commercial vines are harvested at one time point. This can lead to a range of fruit maturities in storage. The objectives of the experiment described here was to characterise variation in fruit maturity within 'Hort16A' canopies and to determine its influence on storage potential. Fruit were harvested from two areas within the canopy (inner – near trunk; outer – away from trunk) from 15 vines in each of three orchards in the Latina region in Italy. Fruit from Harvest 1 and 2 were stored at 5°C for several weeks then transferred to 1.5°C. Fruit from Harvest 3 was stored at 1.5°C. Fruit were stored for 27–29 weeks before assessment of disorders. Hue and Brix differed between inner and outer canopy with fruit from the outer area being yellower with higher Brix than fruit from the inner canopy area. External hue and lightness data showed fruit from the inner canopy had a less bronzed, lighter colour, most likely due to increased shading in this section of the canopy. Chilling injury and rots had an overall incidence of 2.9 and 2.0% after 27 weeks storage, respectively. No physiological pit was observed on any of the fruit. Both chilling injury and rots were more prevalent in fruit from the inner canopy, probably because fruit from this area of the canopy are of a lower maturity at harvest. More uniform populations of fruit in terms of at harvest maturity could be obtained by segregating fruit from the different canopy areas. Segregating fruit into more uniform batches in terms of at-harvest-maturity could be used to improve quality of fruit after long-term storage.