

**Title** Effect of pre-harvest gibberellic acid and calcium applications on on-tree storage of "Satsuma" mandarins

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**Citation** Abstracts of 7<sup>th</sup> International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

**Keywords** Satsuma mandarin; growth regulators; on-tree storage; fruit drop; quality

#### **Abstract**

Late harvest of 'Satsuma' mandarin fruit may cause quality loss based upon the climatic conditions and promote fruit drop. The study carried out for two years aimed at determining the effect of pre-harvest gibberellic acid (GA<sub>3</sub>) and Ca applications on on-tree storage of Satsuma fruit. Gibberellic acid (GA<sub>3</sub>, 10 ppm) and Ca (2% CaCl<sub>2</sub>.2H<sub>2</sub>O), their combined application and GA<sub>3</sub> application repeated twice were tested on Satsuma mandarin (Citrus unshiu Mar. cv. Owari) budded onto trifoliolate orange rootstock. GA<sub>3</sub> were applied two weeks before the color break and at color break whereas Ca was applied at color break stage. Control trees were sprayed with surfactant added water. The first harvest was performed at usual harvest period for the region, and additional two harvests were made at monthly intervals. At each harvest, fruit samples were analyzed for specific weight, peel color, chemical composition of fruit juice and electrolytic leakage of peel. Starting from the second harvest, fruit number was determined and fruit drop rate was calculated. Some of the significant quality losses including puffiness were reduced on trees treated with GA<sub>3</sub> twice. Fruit drop could also be prevented with GA<sub>3</sub> treatments. Fruit skin color advanced rather slowly in GA<sub>3</sub> applied trees however this effect became non-significant towards the end of the storage period. Ca applications alone did not exert major effects. On the other hand, all treatments with GA<sub>3</sub> had positive effects in terms of on-tree storage.