

## ABSTRACT

Master of Science Thesis

### EFFECTS OF DIFFERENT FRUIT SIZE AND HARVESTING TIME ON STORAGE OF NAVEL ORANGES GROWN IN KUYUCAK DISTRICT OF AYDIN PROVINCE

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Washington Navel and Frost Navel oranges grown in Aydin province Kuyucak district were harvested at three different size (small, medium, large) and time (22 November, 03 December, 10 December 2005), and were stored in two different storage house (natural conditions for 6 months, cold storage for 4 months). Washington Navel and Frost Navel fruit stored in natural conditions had an average weight loss % 29.32% and 25.85%, physiological and pathological disorder 37.78 % and 40.00 %, fruit juice 42.71 % and 40.61 %, TSS 11.8 % and 11.7 %, TA 0.64 and 0.59, TSS/TA 18.98 and 20.43, pH 3.83 and 3.92, respectively, at the 6<sup>th</sup> month. That of Washington Navel and Frost Navel fruit stored at cold storage (5±1°C) had 12.79 % and 11.51 %, 66.30 % and 86.11 %, 36.57 % and 35.39 %, 10.4 % and 10.4 %, 0.79 and 0.82, 14.10 and 14.54, 3.50 and 3.65, respectively, at the 4<sup>th</sup> month. While fruit size increases and harvesting time delays, fruit weight loss, TSS, and TA decrease in both storage types. While rind colour L and b values were steadily decreased and that of the rind a value were dramatically decreased in the natural conditions, the colour L value was more dramatically decreased than the rind a value in the cold storage. There was a negative relationship between TA and maturation index in all conditions in Washington Navel, and all conditions except the 1<sup>st</sup> and the 4<sup>th</sup> months in the natural conditions and the 1<sup>st</sup> month in the cold storage in Frost Navel. Fruit could be stored for 5 months in the natural conditions and 3 months in the cold storage without losing much quality.

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**Key Words:** *Citrus sinensis*, fruit size, harvesting time, storage