

Soros Thammarat 2012: Relationship between Fruit Age, Fruit Nitrogen Level and Granulation Incidence of 'Thong Dee', 'Khao Nam Phueng' and 'Khao Yai' Pummelo. Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Assistant Professor Lop Phavaphutanon, Ph.D. 104 pages.

Granulation is a physiological disorder of pummelo pulp. Late harvesting beyond the optimum stage and excess nitrogen (N) fertilization tend to increase granulation incidence in pummelo fruit. To test this hypothesis, we compared granulation in 'Thong Dee', 'Khao Nam Phueng' and 'Khao Yai' pummelo fruit at 3 harvesting stages; 1) one month early harvesting, 2) harvesting at optimum stage and 3) one month delay harvesting. The results showed that granulated juice sacs were mostly found at the stem end and fewer at the styler end. In severe cases, granulation was found in all segments. Number of fruit with granulation and degree of granulation increased with fruit age in all 3 cultivars and the incidence was found even at one month early harvesting. 'Khao Nam Phueng' had more number of fruit with granulation and higher degree of granulation than 'Thong Dee' from the same orchards. For 'Khao Yai', number of fruit with granulation and degree of granulation were not different between fruit harvested in January and April. Degree of granulation in 'Khao Nam Phueng' and 'Khao Yai' were severer than 'Thong Dee'. Granulation tended to increase in large and heavy fruit with tall shape compared to the normal size ones. Additional N fertilization as urea during fruit development through maturity increased peel thickness and N concentration in peel, pulp and leaves near fruit. Positive correlation was found between degree of granulation and increased fruit tissue N concentration. Soil analysis of 2 well managed orchards in Nakhon Pathom and 1 orchard in Samutsongkhram province in this study revealed that soil had high fertility. There was poor correlation between soil nutrient concentrations and degree of granulation in 3 pummelo cultivars.

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