

Jeeraputr Attisitwet 2007: An Inheritance of Salt Tolerant Trait in Guava (*Psidium guajava* L.). Master of Science (Agriculture), Major Field: Horticulture, Department of Horticulture. Thesis Advisor: Associate Professor Unaroj Boonprakob, Ph.D. 69 pages.

Guava is a fruit tree classified as a salt tolerance. The objectives were to evaluate the mode of gene action and inheritance of salt tolerant trait in guava. Thirteen varieties of guava consisting of 6 salt tolerant varieties: 'India', 'Xa'Li', 'Thai Guava', 'Beaumont', 'Okinawa' and 'Alla Habad Safeda' and 7 susceptible varieties: 'Keynok Daeng', 'Kona 1', 'Klom Salee', 'Taiwan', 'Daeng Siam', 'PC.12-102' and 'Pink Acid' were crossed in a diallel plan resulting in 169 crosses. Progeny were planted in 8-inch size of plastic pot containing cleanly washed sands. They were tested for salt tolerance using sodium chloride solution with Hogland's (1950) formula ($EC\ 16\ dS.m^{-1}$) when seedlings were seven months old in green house for 60 days. The experimental design was completely randomized design (CRD). Salt tolerant trait was recorded as an amount of leaf burn. Analysis of variance (ANOVA), genetic effect in combining ability was analyzed by using Method I model I, Griffing (1956) and the heritability estimate in narrow sense (h^2) by using mid-parent offspring regression. The results showed that the inheritance of salt tolerance in guava expressed as quantitative trait and had additive gene action (GCA), non-additive gene action (SCA) and reciprocal effect (REC). The additive gene action had the main role in controlling this trait because the ratio of GCA: SCA: REC was 8: 1: 1.4. The estimated narrow sense heritability was moderate (0.56). Based on the study, 'Beaumont', 'India', 'PC.12-102', 'Okinawa', 'Taiwan' and 'Thai Guava' had the highest salt tolerance and good general combining ability. They will be useful as parents in breeding guavas for salt tolerance.

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