

Arthorn Saklang 2014: Assessment of Combining Ability in Oil Palm (*Elaeis guineensis* Jacq.) Parental Clones Using Diallel Cross. Master of Science (Agronomy), Major Field: Agronomy, Department of Agronomy. Thesis Advisor: Assistant Professor Tanee Sreewongchai, Ph.D. 183 pages.

Combining ability assessment of seven oil palm parental clones of Chumporn Palm Oil Industry Public Company Limited breeding program was carried out was evaluated based on their 21 tenera × tenera (T×T) progenies derived from diallel crosses without reciprocal cross and selfing. All progenies were grown in honeycomb planting designs method. At 36 – 47 month old of oil palm, data were collected on accumulate of agricultural characteristics and yield per plant per year. The Model 1, Method 4, suggested by Griffing (1956) was used for data analysis. The results revealed that significant difference of traits studied. Clone 47 showed highest GCA in bunch yield per plant per year, percentage of oil per bunch and oil yield per plant per year. The cross combination between clone 1 and 6 showed highest SCA in accumulate bunch yield per plant per year and percentage of oil per bunch with the values of 63.0 kg/plant/year and 23.9 %, respectively. The oil yield per plant per year was highest in progeny of the cross C47/C56 with a value of 30.4 kg/plant/year.

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Student's signature

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Thesis Advisor's signature