Yaowanat Hadkam 2010: Repeatability and Correlation between Yield and Yield Components in Bang Boet Dura Oil Palm. Master of Science (Plant Breeding), Major Field: Plant Breeding, Interdisciplinary Graduate Program. Thesis Advisor: Miss Patcharin Tanya, Ph.D. 111 pages.

Repeatability of yield and yield components consisting of bunch and fruit components, and the percentage of oil to bunch was collected in Bang Boet Dura oil palm during June to November 2007. Repeatability values were found between 0.098- 0.691, with the highest and lowest values in bunch weight (0.691) and mesocarp thickness (0.098), respectively. The optimal number of bunches for observation of bunch weight, fruit weight per bunch, axial bunch weight, number of fruits per bunch, weight of large size fruits, and number of large size fruits were 3-6 bunches, weight of small size fruits, weight of medium size fruits, number of medium size fruits and number of small size fruits were 7-11 bunches. While number of fruits for observation of kernel thickness, fruit width, fruit length, weight per fruit and the percentage of mesocarp per fruit, shell per fruit and kernel per fruit were 4-9 fruits, endocarp and mesocarp thickness were 18-22 fruits. The optimal number of bunches for the percentage of crude palm oil and palm kernel oil per bunch are 4 and 8 bunches, respectively. Positive correlation coefficients were observed among bunch weight, fruit weight per bunch, axial bunch weight, number of fruits per bunch, weight of large size fruits, weight of medium size fruits, weight of small size fruits, number of large size fruits, number of medium size fruits, number of small size fruits, endocarp thickness, kernel thickness, fruit length, fruit width and weight per fruit. The highest positive correlations were observed between bunch weight and fruit weight per bunch, bunch weight and axial bunch weight, fruit weight per bunch and weight of large size fruits, bunch weight and weight of large size fruits, and fruit weight per bunch and number of large size fruits, with the values of 0.98, 0.92, 0.91, 0.88 and 0.88, respectively. Path coefficient analysis showed that oil palm yield was directly influenced by bunch weight and number of bunches. The oil palm bunch weight caused by the effect of fruit weight per bunch which was directly affected by weight of large size fruits. High percentage of mesocarp per fruit influenced the percentage of oil per bunch. Therefore, the oil palm breeding program should consider selecting oil palm productivity through yield components.

_____ _____ ___ / ___ / ___

Student's signature Thesis Advisor's signature