

Bunch Component Variations of Inbred Progenies in Third Cycle of Limited Breeding Programme of *Dura* Materials Planted in Peninsular Malaysia and Sabah

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A total of 7163 bunches were analysed from progenies with identical genotype derived from the third cycle of limited breeding programme (LBP) of dura materials from 2016 to 2020 in Bayok Estate of Pamol Sabah and Gomali Estate in Batu Anam, Peninsular Malaysia. The bunch components of the identical dura inbred progenies showed significant differences in traits when planted in geographically distant locations. The mean square (variance) analysed through ANOVA between the two locations showed that the bunch components of fruit to bunch, oil to dry mesocarp and wet mesocarp to fruits were statistically significant at probability (p) < 5 per cent to result in a significantly low oil to bunch in Sabah when compared to Peninsular Malaysia. Difference in kernel to fruit percent between the two locations was marginally significant at p < 5 per cent, while shell to fruit percent was marginally significant at p < 0.1 per cent. Although the progenies from Sabah showed heavier fruit weight (in grammes), statistically the difference in weights of the fruit in both locations were not significant. Correlation coefficient matrix analysis indicates that the two major bunch analysis components that affected the low oil to bunch were low fruit to bunch and low oil to dry mesocarp percent which were highly significant at p < 0.1 per cent. The differences in bunch phenotypic components on fruit to bunch ratio could be the result of the seasonal high rainfall in Sabah as compared to Peninsular Malaysia. The high soil water table from Typic Endoaquept soil in Sabah during flood and tidal water could be the reason for low oil in dry mesocarp. The low seasonal fruit to bunch percent is a common annual natural phenomenon in Sabah.

Keywords: Oil to bunch percent, parthenocarpy, environmental variations, inbred progenies and oil palm breeding.