

## **Inbreeding Depression in IOI Deli *Dura* Inbred Population**

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*Inbreeding programmes of dura progenies selected from the Oil Palm Genetic Laboratory (OPGL) or the Breeding Programme of Restricted Origin (BPRO) gave rise to the presence of a varying degree of rudimentary pollen-producing male flowers on female inflorescence in descendants of PKg 118 in the third cycle of the Limited Breeding Programme (LBP). Meanwhile, in another instance, the progenies of the third cycle of LBP dura D24 of OPGL or BPRO, showed bending of fronds. Both characteristics observed in the progenies were positively correlated to the cumulative inbreeding coefficient ( $F$ ) of third cycle of the improvement programme and could possibly be attributed to the expressions of inbreeding depression. The mean fresh fruit bunch produced per palm per year, and mean bunch weight in PKg 118 were negatively correlated to " $F$ " as compared to progenies of hybrid crosses of dura and pisifera, while in progenies of dura D24 the low bunch weight due to the effect of low fruit to bunch was reflected by low kernel to bunch ratio. This indicated that the progenies were unable to undergo complete natural pollination and fertilisation. The inability to pollinate in D24 inbred progenies could be a sign of inbreeding depression, as the palms were planted in an environment suitable for natural pollination by weevils. The oil in wet mesocarp of both progenies was positively correlated, although the D24 material showed significantly higher oil in mesocarp. The progenies of dura from both programmes showed negative correlation of bunch number against inbreeding coefficient, however, the relationship was not statistically significant.*

**Keywords:** *Inbreeding in oil palm, inbreeding depression, pedigree.*