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Comparison of pollination control methods in producing improved planting material of *Cocos nucifera L.*

Controlled crossing of two highly selected parents is believed to be best method of raising planting material inheriting parental characters and has been widely used in coconut. However open pollination of selected mother palms T (OP) have also been practised in producing planting material in a large scale. Observations have revealed that the improvements in characters of the improvement in the open pollinated progenies.

The objective of the present study is to assess the progenies of a selected set of palms produced through controlled crossing (Tall x Tall) and open pollination T (OP) for important characters yield and flowering time. One hundred individuals each from Tall x Tall and (Op) progeny planted at Pothukulama Research Station Pallama in1961 were assessed for yield during a two year period (1984/85) and for time taken for flowering The results indicated that the time to flower in the T x T and T (OP) was 56 and 60 months from planting respectively ($P<0.0011$). The percentage of palms recording higher than the mean flowering time in T x T is 47 and T (OP) is 35.

The mean nut number during 1984/85 was 91 and 82 nuts/palm/yr for T x T and T (OP) respectively ($P<0.00011$). Considering the within population variability for nut yield, 42% and 46 % of palms recorded less than the mean for T x T and T(OP) respectively. The percentage of palms recording less than 20 nuts/palm/yr were 5 % and 4% for T x T and T (OP) respectively. No significant difference was present for husked nut weight between T x T and T (OP). Eight years of yield data (1978-85) obtained from 14 families (5 individuals/family) each of T x T and T(OP) planted at the same location in 1962 recorded a mean of 72 and 76 nuts/palm/yr respectively ($P>0.05$). The analyses of variance test carried out separately for T x T and T (OP) for nut number/palm/yr indicated that the within family mean square for T x T and T (OP) was 934.42 and 989.24 respectively.

The results of the present study indicates that even though an increase in the mean performance of flowering time and yield is possible through controlled crossing of highly selected parent palms in coconut, the reduction of within population variability of characters is not different from open pollinated progenies of highly selected mother palms.