B-49: Genetic assessment of improved crosses of Coconut (*Cocos nucifera*)

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Progeny testing was adopted using the initial vegetative growth data to evaluate 3 improved crosses of Coconut (*Tall x Tall, Tall x Dwarf green* and *Tall x San Ramon*) arising from selected *Tall* variety palms as female parents and palms of selected *Tall, Dwarf green* and *San Ramon* as male parents. Ten progeny families with 8 sibs/family were tested per cross and with each progeny family from a single mother palm represented by 4 sibs were tested at 2 sites to compare the performance of half sib families in 2 different environments. The mean performance of the 3 crosses showed that *Tall x Dwarf green* was the most vigorous at both sites but generally the performance of all 3 cultivars were better in Bandirippuwa site than at Ratmalagara.

The variance component analysis performed for sites, families, site x family within family effects for each cross showed highly significant site differences for all characters in the crosses *Tall x Tall* and *Tall x Dwarf green*. Borderline significance was detected only in one character for the cross *Tall x San Ramon* indicating the possible stability of the cross. Significant family differences were apparent in the cross *Tall x San Ramon* for all characters showing its potential for improvement and the putative diversity introduced by the male parent. Of all the variance components, the magnitude of the within family component was highest for most characters in the 3 crosses indicating the extent of palm to palm variation in Coconut affecting the stability of performance.