The Truth about Hybrid Coconuts

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A hybrid results from a cross between parents that are genetically unlike and usually has a combination of characters of both parent forms. This mixing often results in greater vigour in terms of growth, survival and fertility of the hybrid over either of the parent forms. This is termed hybrid vigour.

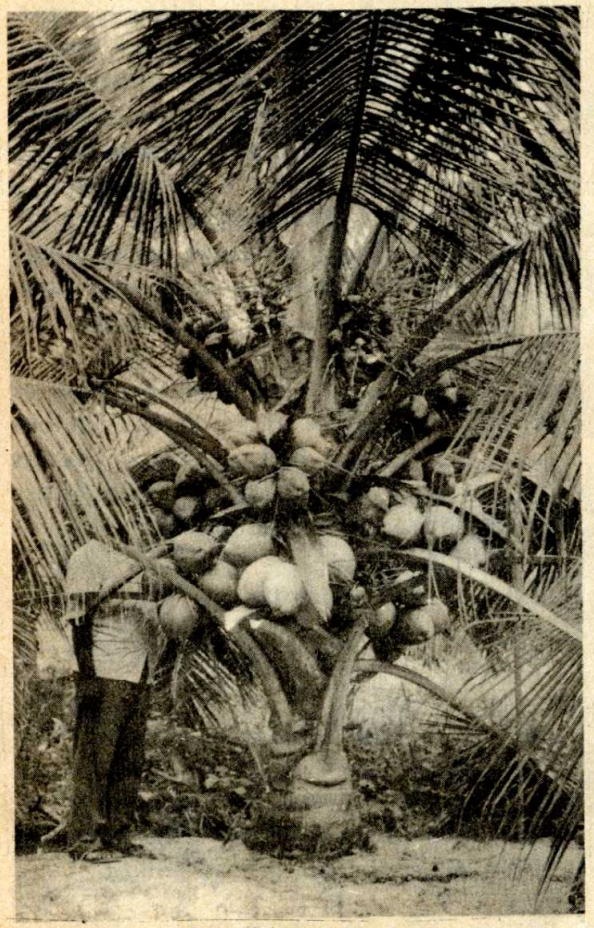
The coconut hybrid developed by the CRI is CRIC 65. This is a cross of dwarf and *tall* parent varieties. D x T indicates that the *dwarf* variety is the female and the *tall* variety the male parent while in the reciprocal cross T x D, *tall* is the female and *dwarf* the male parent. Seednuts from both crosses were produced earlier, but since there was no clear difference in performance between the T x D and D x T, only D x T is now produced commercially as it is easier to produce. This is because hybrids are produced on a large scale by emasculating the female parent and permitting directed pollination and it is easier to emasculate a *dwarf* rather than a *tall* palm due to the low stature of the former.

The aim of producing a hybrid is to combine the desirable characters of both parents into the type. The dwarfs have as desirable

A dwarf palm

A tall palm

characters early flowering 3-4 years from planting and a high nut yield of more than 100 nuts/palm. Further, the short stature of the palm makes picking easier. The *tall* palms inherit the characters of relatively larger nuts giving good qulity copra, tolerance to pests and diseases and ability to thrive and produce well in a variety of soil types and climatic conditions including drought. The CRIC 65 hybrids inherit many desirable characters transmitted from their parents, sometimes even surpassing the parent forms in performance. For example they attain flowering stage in 3-4 years; production may be about 120 nuts per palm but under good management and favourable weather conditions a hybrid palm may yield as much as 250 nuts/palm/year. Copra production is generally about 210 - 215 g/nut resulting in as much as 4 200 kg copra/ha.



D X T hybrid palm

The site for planting hybrid coconuts must be carefully selected as there are specific requirements for hybrid cultivation. It requires a well distributed rainfall of more than 1500 mm (60 in) per annum. It does not tolerate long dry spells or soils that are water-logged or become very hard during short periods of drought. Since hybrids are extremely sensitive to moisture stress it is important to have rainfall of sufficient amount and good distribution. Soil is the most important factor and should be of suitable texture and sufficient depth. Sandy clay loam is the preferred soil type for hybrids.

Hybrid coconuts are very susceptible to drought, an undesirable character transmitted from the dwarf parent, and as a result the yield is deplorably low following drought periods. Heavy button shedding, immature nut fall and drooping of bunches occur if the climatic conditions and soil types are unsatisfactory. It may even be necessary to prop the bunches to reduce the number of falling nuts. The planting of hybrids in the early'70s has sometimes been unsuccessful because they have been indiscriminately planted in the most unsuitable areas such as hill tops, slopes with rocky outcrops and areas prone to prolonged drought. This is aggravated by the fact that the dwarf parents have not been selected. As a result hybrids seem to have lost favour with the general public. However hybrids thrive under conditions of good management and suitable climatic conditions. They are particularly suited for home gardens or cultivation under irrigation.

Experiments are in progress in the two colour forms, *dwarf green* and *dwarf yellow* separately, to select drought tolerant dwarf parents and to cross them with *tall* and obtain hybrids DG x T and DY x T that would perform better in unsatisfactory conditions also.