

# Prospects of Clonal Propagation of the Coconut

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With its distribution in the region of four million hectares around the world and producing a substantial quantity of food and products of great utility, the coconut is rightly eulogised as the 'Kalpak Vriksha' or the tree that provides all necessities of life. However, this 'Heavenly Tree' has not attracted itself to those interested in its genetic improvement, so that it has not been possible to apply some of the conventional crop improvement methods to this perennial palm. The need for evolving a method for propagating the coconut through one of its vegetative organs (i.e. 'clonal propagation') is possible with crops like pine-apple, banana and sugarcane therefore continues to remain a matter for investigation.

Being a palm, the coconut is devoid of off-shoots and the single stem grows to over 30 metres high. The enormous height coupled with its smooth slippery stem, and swaying crown make the trunk most hazardous for a geneticist desirous of shinning and carrying out the pollination work himself. Of the two varieties—the Tall and the Dwarf,—the former accounts for over 95 per cent of the coconuts in cultivation. This variety is highly cross-pollinated in nature, and due to generations of such free-mixing, it has become highly heterozygous. Though its male and female flowers are produced in every inflorescence—"Spadix", the male phase of the floral branch is completed before the female phase commences. Further, until the female phase is over, the next younger spadix usually does not emerge out of its cover. In the Dwarf variety, the male and female phases within and/or between spadices frequently overlap, accounting for the fair degree of purity that exists in this variety. Evolving pure parents for breeding purposes would cover a very long period of time, since the judgement of the productive capacity of a coconut seedling would take a minimum of 15 years. Thus, if one has to study the Tall variety for a few generations, the experimenter's useful span of life would be completed before he could obtain useful results. The cumbrous size of the coconut makes attempts of its study within laboratories or limited field spaces almost impossible. A 15-year palm may have a root-spread of 30-metres across the diameter. In addition, the lack of vegetative propagation which demands the crop to be solely multiplied through seed makes research on the coconut a matter for perpetuation by generations of scientists.

