

FREAK BRANCHING IN *COCOS NUCIFERA* L. IN AMALAPURAM DISTRICT (ANDHRA PRADESH)

D. SUMATHI* and V. RAMASSAMY

Principal (and faculty of Plant Science), Villianur College for Women, Villianur, Pondicherry – 605 110, India.

* Principal (and Faculty of Botany), Kannagi Govt. Girls Higher Secondary School, Villianur, Pondicherry – 605 110, India.

Branching in coconut palm is rare and so far a few cases of branching have been reported. The present report brings out yet another interesting observation of four coconut trees with 1-3 branches (excluding the main trunk) in the two adjacent groves. They include two trees with one branch, one with two and another tree with three branches. This branched trait in those cases is believed to be due to genetic changes caused by mutation in the previous generation as the parent plants of these trees had similar branching.

Keywords: Branched coconut trees; Mutation.

Most palms are readily recognized by their cylindrical unbranched stem and characteristic leaves. They belong to the family Arecaceae which are represented by 63 indigenous species in India¹. There is no regular branching of stem in palms except in the genus *Hyphaene*. However, freak branching has been reported in various palms such as *Phoenix sylvestris*, *P. dactylifera*, *P. roebelinici*, *Borassus flabellifer*, *Arenga sp.*, *Sabal palmetto*, *Copernicia cerifera*, *Areca catechu* and *Cocos nucifera*.¹⁻⁴ Reports on branching of coconut trees include a coconut tree from Malabar (branching twice), a coconut tree with four branches from Car Nicobar Islands and a coconut tree with two branches including the main trunk from the outskirts of Pondicherry³.

During a botanical trip to Vanapallipalem (Amalapuram District, Andhra Pradesh, India) branched coconut palms were encountered in two groves. There were four coconut palms showing one to three branches. One tree showed (Fig. 1) one branch at an approximate height of 32 feet. The branch is one foot high with same thickness as the main trunk and bear normal fruits.

The other three trees are seen growing in a single row in another grove. Among them one plant about 40 years old and approximately 22 feet high (Fig. 2) had one branch with fruits. Second tree at the height of 22 feet showed one branch. The main stem after growing 1 ½ feet produced one more branch. So totally with two branches at different levels. The third tree showed totally three branches bearing normal fruits. The main trunk started branching at the height of 22 feet (approximately

and produced three branches successively at different levels.

It is noteworthy that these three trees in this grove had first branching at the same height of 22 feet and may be of same age. Also these branches are of same thickness as the main stem. The girth of main trunk of these plants is similar to that of other unbranched palms in that grove.

The causes of branching in the palms have not been definitely identified. However, it is attributed to destruction of apical bud, injury to growing point due to forest fire and insect bites¹ or strokes of lightning which lead to splitting of terminal bud⁴ or due to injury to apical bud caused by strong winds³.

Discussion with owner Mr. Chikkala Viswanadham of Vanapallipalem of these two groves and local people brought some interesting facts to light. According to them there were two coconuts palms of 65-70 years old and 40 feet tall with six to seven branches. They were healthy and borne fruits normally. Those two coconut palms were uprooted during the cyclones in the years 1969 and 1986 because of the heaviness of crowns. The presently noticed trees were said to be the off-springs grown from the fruits of these parent trees. Hence, there is every reason to believe that branching in these trees might not be due to the reasons attributed above¹⁻⁴. Genetic changes caused by mutation in their parent trees which were transmitted to their off-springs. Consistent branching from 1-3 observed in the four trees of the two groves lead us to suggest that the above trees are the off-springs of the parent trees which possessed branches due to genetic changes caused by mutation.



Fig. A. Coconut palm branched once in the first grove;
Fig. B. Apex of the branched coconut palm.

Fig. A. A row of branched coconut palms in the second grove; **Fig.B.** Coconut palm branched twice; **Fig.C.** Coconut palm branched thrice

Acknowledgement

The authors thank Dr. B. Kannabiran, Professor of Botany, Department of Biochemistry and Molecular Biology, School of Life Sciences, Pondicherry University for critically going through the manuscript.

References

1. Mahabale TS 1982, *Palms of India* Maharashtra Association for cultivation of Science Research
2. Bhat MP, Patel RM and More PG1984, Terminal Branching in *Phoenix sylvestris* Roxb from Gujarat *Indian Botanical Contactor* IA (2) 48.
3. Ramassamy V and Kannabiran B 1991 Occurance of branched *Borassus flabellifer* L and *Cocos nucifera* L. in Pondicherry J. *Bombay Nat. Hist., Soci.* 88 305-306.
4. Corner EJH 1966 *the Natural History of Palms.* Institute, Pune.