

THE OCCURRENCE OF ALBINOS IN *CALAMUS HOOKERIANUS*

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Calamus hookerianus is a medium-diameter rattan growing in the evergreen and semi-evergreen forests of south India. This species is extracted largely from the forests to cater the needs of the furniture industry.

This is the first report on the occurrence of albinos in this species. The fruits of *C. hookerianus* were collected in April from the Achenkovil and Vazhachal forests of Kerala for enrichment planting of degraded forests. As soon as the fruits were collected, they were cleaned and sown in the nursery beds filled with saw dust. After two weeks the seeds started germinating. In one seed lot collected from Achenkovil there were 2500 green seedlings and 115 albinos (4.4%) (Figure 1). These chlorophyll deficient seedlings survived for less than a month. As there were many such albinos, it can be inferred that they were not spontaneous mutants but only recombinants of recessive genes. Thus, both of their parents must be carriers of the recessive albino gene.

Albinos were reported earlier in many other species, including *Gmelina arborea* (Venkatesh *et al.* 1978), *Tectona grandis* (Bagchi & Emmanuel 1983), *Dendrocalamus strictus* (Yadav *et al.* 1987), *Bambusa bambos* (Indira & Koshi 1986) and *Melocanna baccifera* (Dakshinadas 1995). A report from Malaysia shows that two trees of oil palm, *Elaeis guineensis*, on selfing, produced albino progenies in the ratio of 3:1 (Kushairi *et al.* 1992). In a few species albinos have served as genetic markers for predicting the nature of the mating system, as reported in *Pinus densiflora* (Chayaba 1977), *P. ponderosa* (Mitton *et al.* 1981) and in *B. bambos* (Indira 1988).



Figure 1 Albinos in *Calamus hookerianus*

In dioecious species there is little possibility for selfing and, hence, the chance of producing albinos is very rare and occurs only when a female plant is pollinated by one of its relatives or by a plant carrying genes for albinism. Rattans are dioecious and, therefore, completely cross-breeding in nature. However, dioecy does not exclude the possibility of inbreeding by mating among relatives (Finkelday 1995). Moreover, the completely out-crossing nature of dioecious species often leads to less intra-population variation.

From the above, it can be inferred that in the population of *C. hookerianus* from Achenkovil, inbreeding had taken place. One of the reasons for inbreeding might be the decreasing population size due to destruction of the forest. Many species of rattans are severely threatened and are becoming rare due to habitat destruction, over-exploitation and unsound harvesting techniques (Renuka 1992). Over the past few decades drastic depletion of rattan resources has become a problem in south India. In addition, the destruction of the natural habitat of canes has negatively affected the genetic base of rattans. Though *C. hookerianus* is widely distributed in the Western Ghats of India, over-exploitation has reduced the number of individuals within populations. This will likely lead to close relationships between individuals and thereby causing low intra-population genetic diversity. Unless strong measures are taken to protect the natural habitat of cane, there is a grave danger that the genetic diversity will be lost forever.

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