Altitude and Areca Cultivation

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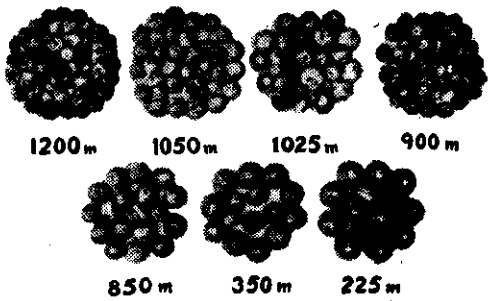
Areca catechu Linn., the common betelnut palm is a tropical perennial cultivated in the hot damp tracts, either in deep valleys or hill slopes and plains under varied soil conditions and altitudes. Nuts harvested from high elevations are found to have soft kernel and do not possess sufficient weight. When fully tree ripe nuts are dried for making *chali*, they shrink considerably and become unfit for marketing. Since the endosperm or the kernel is the most important economic produce of areca, any deformity affecting its development will tell upon the income of the farmers who depend on areca cultivation. The importance of the problem was realised when enquiries were received from various cultivators seeking advice for areca cultivation under higher elevations.

A systematic study on the problem was initiated at Central Plantation Crops Research Institute, Regional Station, Vittal, to find out the different factors responsible for this phenomenon. A survey was conducted in South Kanara and Coorg districts of Mysore state and different areca gardens were selected at different altitudes ranging from 350 m to 1200 m. Periodical collection of nuts for two years were made from all the selected gardens and they were used for drying and germination trials. The results of the studies are presented below.

Altitude (Metres)	Percentage of germination	Percentage of kernel to wet weight
1200	46 25	16.00
1050	49 50	18.51
1025	51 20	17 74
900	66 10	18 95
850	88.15	21.96
350	95 41	24.25
225 (control)	96.38	24 99

It is clear that nuts collected from lower altitudes i. e. from 850 m downwards give maximum germination percentage. *Chali* weight compared to that of whole nuts at lower altitudes (850 m and below) is more than that of the higher altitudes. In general there is a steady increase in germination percentage and *chali* weight as the altitude decreased and both characters reached the maximum in the plains.



Chali from different altitudes

Observations on the chali of different altitudes showed that the ones collected from above 850 m were unfit for marketing because of reduced size, excessive shrinkage and cracking. Since they were found to be soft, they were easily suseeptible to fungal and insect attacks.

The preliminary observations on the temperature data collected at different altitudes showed that the maximum and minimum temperatures during the fruiting period at high elevations were considerably low, probably highly inadequate for the proper development and hardening of the kernel.

Hence it is suggested that areca can be cultivated successfully for obtaining quality *chali* by rejecting areas of high altitudes above 850 m.