Bulk-Pollination for Increased Fruit-set in Arecanut

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Arecanut (*Areca catechu Linn.*) commonly known as betelnut is a perennial seed propagated crop which is essentially cross fertilized. It is monaecious producing 15,500 to 27,000 male flowers and 50 to 600 female flowers in a spadix under South Kanara (Mysore) conditions. In spite of the production of a large number of male and female flowers, the fruit-set is found to be only between 32% and 43% of the total female flowers produced. The shedding of female flowers is mainly due to failure in pollination and fertilization. A study conducted for three years revealed that the mean fruit-set for selfing, crossing and open pollination is 28%, 34.7% and 37.6% respectively. The present study was taken up to explore the possibility of increasing fruit-set by pollinating the flowers of Areca under controlled conditions.

The male flowers of the selected palms, soon after emergence from the spadix were removed and the female flowers bagged to prevent the entry of foreign pollen. After the opening of the female flowers two bunches in each palm were pollinated by pollen collected and bulked from the rest of the palms of the group using the principle of polycross. After two months the fruit-set was recorded. The data are presented below.

Percentage of fruit-set

Treatment.	Number of palms selected.	Total No. of female flowers.	Fruit-set after two months.	Percentage of fruit-set.
Pollination using the principle of polycross.	19.	10,353	6,242	60 31
Control (open pollination)	19	11,461	3,650	32 . 07

The difference was tested statistically and the results showed that fruit-set obtained by controlled pollination is significantly superior to the control. An examination of the bunches where increased fruit-set was obtained revealed that the nuts were normal with well developed kernel and were without appreciable reduction in size.

From the earlier studies it was seen that pollination under controlled conditions using pollen from a single palm had not improved fruit-set. The present finding showed that the source and type of pollen as well influenced fruit-set to a very great extent. Pollination of palms using bulk pollen provides more chances of fertilization, thereby improving fruit-set and also the ultimate yield of palms.