

RP-85

EFFECT OF GROWTH REGULATORS ON FRUIT SETTING OF ARECANUT
(ARECA CATECHU L.) PALMS

POOR fruit set and heavy drop in arecanut palms are serious problems affecting kernel yield adversely. Recently, many plant growth regulators have been found effective in increasing the fruit setting percentage of various fruit crops^{2,4}. The present investigation aimed at evaluating the effectiveness of certain growth regulators on fruit set and yield of a local variety *Vittal* of arecanut, commonly grown in South Kanara District of Mysore State.

Fifty arecanut palms of ca. 15 years old, uniform in vigour and productivity were selected under this investigation. Gibberellic acid (GA), 2,4-dichlorophenoxyacetic acid (2,4-D) and N-dimethylamino succinamic acid (B-995) in various concentrations were sprayed to newly opened inflorescence. One lot kept as control, sprayed with distilled water. Altogether there were 10 treatments; each palm of single inflorescence representing a replication. Inflorescence were sprayed twice at the interval of 25 days from the first spraying.

The data on total number of female flowers per inflorescence before the sprayings, set, percentage increase or decrease over control obtained two months after sprayings and yield at the harvest are given in Table I.

Results showed that spraying with 100 ppm GA gave better fruit set than its other concentrations. Similarly, sprayings with 50 ppm 2,4-D and 200 ppm B-995 gave more fruit set than the other doses of these compounds but lesser than 100 ppm GA. However, the treatment differences were non-significant. Similar trends was also obtained in the case of nut yield per bunch and the treatment differences were significant. The increase in total yield of nuts was possibly due to size, weight, components of inner material and the retention of nuts at the time of harvest. In general, spraying with growth regulators caused more fruit set and kernel yield than in control, except 300 ppm B-995. Results of the present investigation are in conformity with those reported earlier in other crops^{1,3}.

TABLE I
Fruit setting in arecanut palms

Treatment	No. of female flowers per inflorescence	% fruit set	% increase or decrease over control	Nut yield per bunch (Kg)
Control (water spray)	217.8	23.11	..	7.0
GA 50 ppm	346.4	51.91	+124.4	11.5
GA 100 ..	313.2	53.07	+129.6	18.1
GA 200 ..	317.2	49.37	+113.6	15.7
2, 4-D 25 ppm	291.0	38.08	+ 64.7	9.4
2, 4-D 50 ..	318.4	49.29	+113.2	11.4
2, 4-D 100 ..	383.2	24.33	+ 5.2	8.5
B-995 100 ppm	364.6	45.47	+ 96.7	14.0
B-995 200 ..	183.0	50.00	+116.3	16.8
B-995 300 ..	251.4	21.24	- 8.0	6.7
CD at 5% level	..	NS	..	5.3

Results reported above suggest that the fruit set and yield of arecanut palms may be increased by spraying with 100 ppm (GA) or 50 ppm (2,4-D) or 200 ppm (B-995) with two sprays.

The authors are grateful to Shri K. V. Ahamed Bavappa, Director, for his encouragement and facilities.

Central Plantation Crops Research Institute,
Regional Station, Vittal,
February 9, 1974.

R. B. R. YADAVA.*
K. N. MURTHY.
R. S. N. PILLAI.

* Present address: Indian Grassland and Fodder Research Institute, Jhansi, U.P.

- Gangolly, S. R. *et al.*, *Indian Coconut J.*, 1956, 9, 135.
- Muhammed, V. *et al.*, *Mad. agric. J.*, 1969, 56, 286.
- Mukerjee, S. K. and Roy, B. K., *World Crops*, 1966, p. 34.
- Saha, A. K., *All. Farmer*, 1971, 55, 581.