

EFFECT OF TILLAGE OPERATIONS IN ARECANUT PLANTATIONS OF MAIDAN PARTS OF KARNATAKA ON THE PRODUCTIVITY OF PALMS

M. SANNAMARAPPA, S.N.S. KUMAR, AND B. NAGARAJA

*Central Plantation Crops Research Institute, Research Centre,
Hirehalli-572 131, Karnataka State, India*

ABSTRACT

The results of a tillage experiment on arecanut indicated that digging with mummy fork twice a year in June and December produced significantly more number of leaves, spadices, bunches, fruits, and wet weight of nuts than all other treatments.

INTRODUCTION

Arecanut (*Areca catechu* Linn.) is grown in the *maidan* parts of Karnataka State in about 9,000 ha land. The crop is irrigated in the winter and summer months. Precise information about the cultural operations to be adopted in these gardens for obtaining maximum yield is however not available. The present study was carried to find out the benefit of weeding and digging on yield and various yield attributes.

MATERIALS AND METHODS

The experiment was conducted from 1971 to 1975 on an established arecanut garden of the Centre. The soil of the garden was clayey loam. The palms were seven years old and had started yielding. The treatments were: (1) scything grass and weeds twice a year in June and December; (2) digging with mummy fork once a year in December followed by scything grass and weeds in June; (3) digging with mummy fork twice a year in June and December; and (4) scything grass and weeds twice a year plus digging with fork once in two years. The experiment

was laid out in a randomized block design with six replications.

The trees were planted at 2.7m×2.7m spacing. Fertilizers were applied at the rate of 100 g N, 40 g P₂O₅, and 140 g K₂O in addition to 10 kg cattle manure and 12 kg green manure per palm per year. The fertilizers were applied in two split doses in September-October and February. Each treatment plot consisted of 12 experimental palms and a row of border palms all round. Data were collected on number of bunches, number of nuts, wet weight of nuts, and number of fallen leaves in each year. Four years' data were pooled and analyzed.

RESULTS AND DISCUSSIONS

The values for all the characters increased as the tree advanced in age (Table I). Digging with mummy fork twice a year in June and December gave maximum number of nuts (427.0) and wet weight of nuts (6.67 kg) per palm. This treatment was significantly superior to the others. The analyses of the data for the yield components also showed that Treatment 3 gave the highest values for

TABLE I

Effect of different methods of tillage on the yield of arecanut and yield components

Treatment	1971-72	1972-73	1973-74	1974-75	Pooled
	Bunches (No./palm)				
1	1.20	1.37	2.05	2.18	1.70
2	1.15	1.60	1.37	2.03	1.54
3	1.92	2.00	2.65	2.32	2.47
4	0.65	0.62	0.33	1.43	0.76
CD (P = 0.05)	0.61	0.70	0.80	0.83	0.61
	Nut (No./palm)				
1	118.0	225.0	343.0	335.0	255.0
2	100.0	191.0	164.0	287.0	186.0
3	225.0	369.0	515.0	597.0	427.0
4	26.0	78.0	39.0	176.0	80.0
CD (P = 0.05)	107.0	130.0	135.0	173.0	107.0
	Wet weight of whole nut (kg)/palm				
1	1.89	3.84	4.44	5.21	3.84
2	1.60	3.35	2.79	4.48	3.05
3	3.79	6.19	7.75	8.96	6.67
4	0.42	1.17	0.67	2.49	1.19
CD (P = 0.05)	1.57	2.34	2.19	2.72	1.88
	Leaves fallen (No./palm)				
1	4.5	5.8	6.1	5.8	5.5
2	4.3	6.2	5.6	5.9	5.5
3	5.1	6.7	6.3	6.5	6.2
4	3.4	5.9	3.8	5.8	4.7
CD (P = 0.05)	0.8	NS	0.8	NS	0.7

number of bunches per palm, and leaves fallen per palm. The leaf fall data did not, however, show any consistent differences between treatments.

Thus the data shows that digging twice a year was the best of all treatments. There is a belief among arecanut farmers that digging the gardens is harmful in that this damages

the root system. The present data does not support this.

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